

**The Annual Report
of the
Recycling Public Advisory Council**



**Presented to the
Honorable Jack Markell, Governor of Delaware
and the
146th Delaware General Assembly**

**November 2012
(Eleventh Edition)**

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The Annual Report of the Recycling Public Advisory Council

November 2012 (Eleventh Edition)

Authored by:

The Recycling Public Advisory Council

Edited and Prepared by:

The Division of Waste & Hazardous Substances
Department of Natural Resources and Environmental Control

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The Department of Natural Resources and Environmental Control

For More Information Contact:

Cathy Hartman Thompson
Solid & Hazardous Waste Management Section
Department of Natural Resources and Environmental Control
89 Kings Highway
Dover, DE 19901
Phone: (302) 739-9403
Fax: (302) 739-5060
E-mail: catherine.hartman@state.de.us

www.dnrec.delaware.gov/whs/awm/Info/Pages/RPAC.aspx

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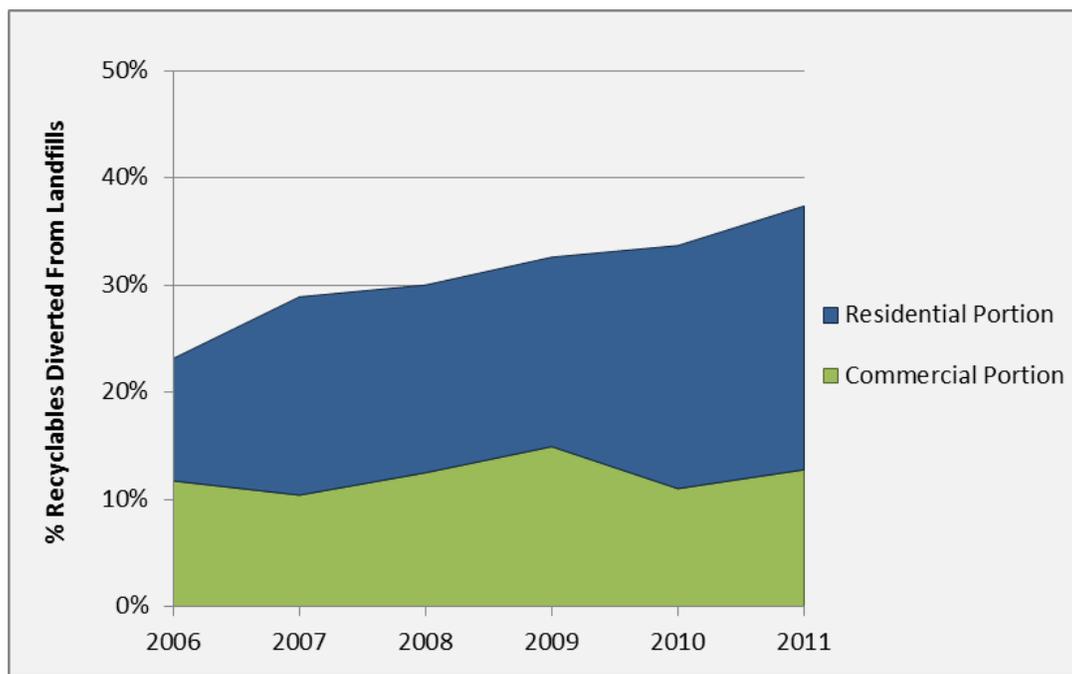
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Executive Summary

The past few years have seen several significant developments related to recycling in Delaware: The introduction of single stream recycling, the yard waste ban at each of the Delaware Solid Waste Authority (DSWA) landfills, the openings of large scale composting facilities, the passage of the Solid Waste Recycling Law (Universal Recycling Law), and now the addition of two Material Recovery Facilities (MRFs) in Delaware. These are all major advances and are reflected in our increasing diversion rates.



We are creating an environment in Delaware that is increasingly supportive of recycling activities. There are many benefits to recycling, which are often touted and occasionally debated. However, there is one impact, which most people support, and that should be acknowledged here: through a difficult period of economic recession, our recycling policies in Delaware have created significant investments in new industry and new jobs and it appears that there is more to come. Delaware's recycling, reuse, and remanufacturing industry was estimated to have a \$346 million direct positive impact on our State's annual economy in 2009, and this number has continued to grow.

The Recycling Public Advisory Council (RPAC) has 16 Members representing diverse interests and has met regularly since the last report in November 2011. In addition to supporting and reporting on recycling activities, the RPAC is diligently working with all stakeholders to help implement the requirements of the Universal Recycling Law in the timeframes required. A more detailed discussion of these efforts follows. This report covers recycling activities since November 2011 and recycling measurement for calendar year 2011.

Recycling Legislation

Since the signing of the Universal Recycling Law in June of 2010, the RPAC has focused upon the implementation of the many elements of this law. The first major milestone of this law was single-family residential recycling, which was fully implemented by September 15, 2011. The next milestone is multi-family residential recycling, to begin no later than January 1, 2013 yet many haulers have already begun to provide this service. The final component of this law is recycling in the commercial sector, which has an implementation deadline of January 1, 2014. A report describing the implementation plan for commercial recycling is expected to be released at the same time as the publication of this Report.

Recycling Grants and Loans Program

The RPAC has worked with the Department of Natural Resources and Environmental Control (DNREC) to develop grant and loan guidelines as required by the Universal Recycling Law. The first cycle of the Universal Recycling Grant and Low-Interest Loan Program (grant program) funded twenty-two entities with over \$4.8 million to primarily support residential single-stream recycling. The second cycle of the grant program funded eight entities with over \$325,000; the second cycle prioritized multi-family residential single-stream recycling projects. The priority for the third and fourth cycles of the grant program will likely be to support recycling efforts in the commercial sector, those areas which require the most help, and those areas where the greatest diversion impact would be realized.

Outreach and Education

The RPAC believes that efforts to increase the awareness and benefits of recycling are critical to improving how waste is managed in Delaware. Therefore, the RPAC has worked with the DNREC and the DSWA to develop and implement outreach efforts. This has included such items as radio ads encouraging recycling, public meetings, billboards, and a how-to guide to inform individuals on what and how to recycle.

Recycling Diversion

The RPAC has used the same methods to calculate recycling rates in Delaware since 2006. The methodology is objective, scientific, auditable, and consistent with the U.S. Environmental Protection Agency's (EPA) guidelines. A summary of the recycling rates produced using this methodology since 2006 is shown in Table 1 below:

Table 1. Recycling Rate Summary, CY 2006-2011.

	Calendar Year					
	2006	2007	2008	2009	2010	2011
Diverted Recyclables	23.2%	28.9%	30.0%	32.6%	33.7%	37.4%

It is important to note that the first full year of data in which the first component of Universal Recycling was implemented (2012) will not be *reported* until late 2013 and the first full year including the commercial component of Universal Recycling will not be reported until late 2015. With a statewide recycling rate of over 37% for Calendar Year 2011 and the full impact of the Universal Recycling Law still to come, Delaware appears to be on track to meet the goal of 50% diversion of MSW by 2015.

Recommendations

The RPAC's recommendations to Governor Markell and the General Assembly include steps they can take to increase the recyclables diversion rate:

- 1. Provide RPAC the discretion to fund those purposes specifically identified in the original Universal Recycling Legislation (7 Del. C. Chapter 60, Subchapter III, Solid Waste Recycling).** Do not divert further funds from the Delaware Recycling Fund without RPAC recommendations.
- 2. Lead by example - require recycling in all state government facilities, including public schools.** Many schools, legislative branch offices, and judicial branch offices are believed to lack effective recycling programs.
- 3. Support the continued implementation of Universal Recycling, as enacted by law.**
- 4. Continue to support the Division of Revenue efforts to maximize bottle recycling fee revenues.**
- 5. Assess the status of Executive Order 18.** Measure the status of recycling in all agencies required to do so by Executive Order 18.
- 6. Support recycling outreach and educational efforts in Delaware.** There is a need to help Delawareans understand how to recycle, opportunities for various materials, and the benefits of recycling from both the residential and commercial sectors.

1.0 Purpose

This is the Annual Report of the Recycling Public Advisory Council (RPAC). The purpose of the report is to fulfill requirements of 7 Del. C., §6058, which directs the RPAC to prepare an annual report addressing the following:

1. The status of attainment of the recycling goals specified in 7 Del. C., §6056;
2. An accounting of the recycling grants and loans programs and recommendations for future funding of the programs;
3. An assessment of the activities of both the DNREC and the Delaware Solid Waste Authority (DSWA) in achieving the goals specified in 7 Del. C., §6056;
4. An objective, auditable accounting of recycling rates for total solid waste, municipal solid waste, and residential solid waste; and
5. Such other recommendations as the RPAC shall deem appropriate.

The Solid Waste Recycling Law (the Universal Recycling Law) is attached to this report as Appendix A. A list of the current RPAC members can be found in Appendix B.

2.0 Background

2.1 Benefits of Recycling

There is more to recycling than feeling good about the environment. It also has tremendous economic value. Recycling:

- **Provides over 10 times more jobs than landfilling**
- **Creates local industry**
- **Extends the useful life of municipal landfills**
- **Reduces emissions of greenhouse gases**
- **Saves energy**
- **Conserves natural resources**
- **Reduces environmental damage from industrial, residential, and commercial waste**
- **Teaches environmental stewardship to individuals**

For further detail and supporting documentation please reference *The Sixth Annual Report of the Recycling Public Advisory Council*, visit the RPAC website, or contact the Division of Waste and Hazardous Substances.

The Northeast Recycling Council, Inc. (NERC) produced the *Recycling Economic Information Study Update: Delaware, Maine, Massachusetts, New York, and Pennsylvania* in February 2009. This report and its last two iterations are available on NERC's website, www.nerc.org. An important note is that the Delaware recycling, reuse, and remanufacturing industry has a \$346 million direct positive impact on our State's annual economy - and this number is growing.

2.2 Timeline of Recent Recycling Efforts in Delaware

The State of Delaware has been promoting recycling since 1975, and a more extensive history of those efforts can be found in Appendix E. The following is a summary of recent recycling efforts.

In early 2008, the DSWA converted their recyclables collection programs to single-stream. Participants no longer needed to separate traditional recyclables (i.e. glass bottles, cans, plastic bottles, mixed papers) by material type. As a result, recycling became more convenient and easier for people to participate. Other entities, including some waste haulers, also began to offer curbside single-stream recyclables collection service.

In June of 2009, House Bill 201 was passed by the General Assembly on the last day of session. It essentially repealed the Delaware Beverage Container Law (or Bottle Bill), and removed the deposit and redemption system related to beverage containers. Governor Markell vetoed House Bill 201 in July of 2009, on the grounds that it would have a negative impact on recycling and offered no viable alternative.

In December of 2009, Peninsula Compost Company, LLC completed construction of the Wilmington Organic Recycling Center near the Port of Wilmington. This composting facility is approved to accept and process up to 160,000 tons of yard waste, wood waste, food waste, hatchery waste, and animal bedding into compost annually.

In February 2010, Governor Markell signed Executive Order 18. This Executive Order set goals in the following categories for the executive branch of state government: energy conservation/efficiency, LEED green building practices, renewable energy, reduced transportation impacts, recycling diversion (75%), and environmentally preferable purchasing.

In April 2010, the DSWA updated its Statewide Solid Waste Management Plan (SSWMP). The SSWMP calls for many waste reduction strategies, several of which required action from government and businesses.

In May 2010, Blue Hen Organics opened a 46-acre composting facility in Frankford to the general public. This facility is approved to accept and process 57,000 tons of yard waste, wood waste, food waste, hatchery waste, and chicken litter into compost annually.

On June 8, 2010, the Universal Recycling Law was signed into law. This legislation passed after significant input from many stakeholders and coordination from the Governor's Office. It transitioned Delaware out of a flawed beverage container deposit system into a comprehensive recycling system. It also legislatively created a reformed RPAC.

On January 1, 2011, the Central Solid Waste Management Center (Sandtown Landfill) and the Southern Solid Waste Management Center (Jones Crossroads Landfill) stopped accepting yard waste mixed with trash. DSWA and DNREC agreed to permit conditions that restricted yard waste in July of 2010. All three DSWA landfills now ban yard waste.

By September 15, 2011, all single-family households with household trash collection, and many bars and restaurants, were provided with single stream, curbside recycling collection services.

In December, 2011, DSWA's Board of Directors approved staff to enter into agreements with the recycling company ReCommunity (to recycle municipal solid waste recyclables) and with Revolution Recovery (to recycle construction and demolition recyclables) at the Delaware Recycling Center (DRC) in New Castle.

In January, 2012, the DSWA, in partnership with Dart Container Corporation, began a pilot program to collect clean, #6 polystyrene foam (i.e. Styrofoam) for recycling at the DRC in New Castle. The program expanded to a second collection location at the Milford Transfer Station in February, 2012.

On March 1, 2012, Blue River Resources, LLC was granted a permit to operate a materials recovery facility (MRF) to separate paper, cardboard, plastic, metal, and glass for recycling. The facility is permitted to accept approximately 216,000 tons of recyclable waste materials per year. As of October 2012, the new MRF was 75% operational.

On March 17, 2012, non-profit organization Eden Delmarva launched the REPLENISH project with DNREC's assistance. The Sussex County-based project encourages the recovery of organic materials from 23 local restaurants to produce compost that is used at local farms. The compost fertilizes locally grown produce, which is then marketed back to the restaurants.

In April 2012, Revolution Recovery began accepting construction and demolition materials for recycling at its 42,000-square foot facility at the DRC.

In May 2012, the DSWA announced a 20-year agreement with ReCommunity to operate an automated materials recycling facility (MRF) at the DRC. State-of-the art sorting equipment will be housed in an existing building, and will process recyclable aluminum, plastics, paper, cardboard, tin and glass collected from throughout Delaware.

Spring and summer 2012 showed increased activity and awareness of recycling issues within the General Assembly. Senate Joint Resolution 8 established a strategy committee to study carpet recycling, and to report back to the General Assembly with a 10-year carpet recycling strategic plan. Senate Resolution 24 called for DSWA, DNREC, and the Zero Waste Working Group develop a plan and proposed legislation to address single-use plastic shopping bags by January of 2013.

3.0 RPAC Activities

Over the past year, the RPAC has primarily focused its efforts on implementation of the Universal Recycling Law. This includes providing recycling grant and loan guidance, establishing recycling industry reporting guidance, and measurement and reporting of the amount and percent diversion of recyclables from Delaware landfills.

3.1 By-Laws

With the passage of the Universal Recycling Law, the formerly existing RPAC was reformed. The membership was expanded to 16. The RPAC quickly set to develop bylaws with the goal of being as transparent as possible. Though most were already in practice, the bylaws set the foundation for how the RPAC conducts business. These bylaws are publically available on the RPAC website, www.dnrec.delaware.gov/whs/awm/Info/Pages/RPAC.aspx.

3.2 Measurement and Reporting

Prior to the reformation of the current RPAC, a Measurement and Methodology Subcommittee developed a methodology for measuring recycling diversion rates based upon EPA guidelines. This methodology provided an objective and auditable approach to recycling measurement which was relevant and repeatable. The Subcommittee's name was subsequently changed to "Measurement and Reporting" but their work continues in the current RPAC and has resulted in the sixth Recycling Measurement Report (included as section 4.0 of this report). Most importantly, these Recycling Measurement Reports establish a uniformly accepted approach that will make past, present, and future recycling measurements consistent and comparable.

The RPAC and DNREC have developed guidelines for the recycling industry to report information as directed by the Universal Recycling Law (7 Del. C., §6056). The RPAC is using, and has used, a consultant to collect recycling data. Because reporting on commercial recycling activities was not previously obligatory, the Recycling Measurement Report was limited to voluntary surveys. The new, legally required reporting system will generate a fuller and more accurate spectrum of data, and will result in a better overall measurement of recycling in Delaware. The first reporting year with the new data collection was 2011, which means this is the first report with the required industry reporting. The first full year of data resulting from the first component of universal recycling implementation will not be reported until late 2013.

3.3 Recycling Markets

Paul Bickhart (RPAC Member representing the recycling industry) and Michael Parkowski (RPAC Member representing DSWA) have key industry contacts providing information on the sale of collected recyclables. They have educated the RPAC on the status of recycling markets to better understand current industry circumstances. In late 2008, the markets for recycled commodities declined sharply in response to the national and global economies. Later in 2009 prices very slowly started to improve. The outlook continued to be positive into 2010, and was

relatively strong and stable in 2011. Prices generally declined for some commodities and remained flat for others in 2012.

3.4 Outreach

The RPAC, DNREC, and the DSWA have coordinated education of the public on the transition into universal curbside recycling, better yard waste diversion, DSWA's departure from curbside recycling, the transition out of beverage container deposits, recycling industry reporting requirements, and the availability of a new recycling grant and loan program. Outreach efforts will continue. Educating the public is of very high importance to the RPAC and a necessary part of any successful program. Citizens might not know why they should recycle or how to participate. The RPAC has developed a Subcommittee to help guide outreach efforts, including general steps forward for DNREC and the DSWA. While the RPAC does not provide recycling services, they want to facilitate and encourage recycling among citizens. DNREC and DSWA outreach efforts are described in Section 6, Section 7, and Appendix D.

3.5 Other Activities

The RPAC is committed to helping Delaware find better waste management practices. Regular meetings provide insight into a variety of topics. Most discussions and presentations over the past year have focused on the implementation of the Universal Recycling Law. As required in the Universal Recycling Law, RPAC submitted a report entitled "Recommendations for Implementing Universal Recycling in Delaware's Commercial Sector" to the Governor and the General Assembly, concurrent with this report, in November 2012. That report includes a Frequently Asked Questions (FAQ) section, as well as a series of commercial recycling 'toolkits' to help various types of commercial entities (such as office buildings, restaurants, hotels, and supermarkets) comply with the Universal Recycling Law.

RPAC significantly contributed to the Universal Recycling Grant and Low-Interest Loan Program by reviewing and scoring grant applications. In the past year, RPAC increased its focus on yard waste, carpet recycling, and single-use plastic bags. Considerable time was also spent discussing recycling fee revenue. The revenues raised by the recycling fee have been consistently lower than initial projections. At current rates, the total amount collected by the end of 2014 will be about \$14 million, or 60% of the original \$22 million projected. The revenues raised in 2012 were generally higher than in 2011, but are still well below projections.

4.0 Recycling Measurement Report

Originally under Executive Order 90, the RPAC had been directed to use the U.S. EPA's definitions of "recycling" and "municipal solid waste" and also to develop an "objective and auditable accounting of recycling rates for total solid waste, municipal solid waste, and residential solid waste." In response to this directive, the RPAC created the Measurement and Reporting Subcommittee (M&R Subcommittee) comprising members of the RPAC, DSWA, DNREC, and the community. Pursuant to this directive, the M&R Subcommittee produced a methodology which was developed via an open and transparent process, recorded in such a way that it could be easily understood by members of the general public, and which was fully endorsed by each organization represented on the Council. This methodology has been consistently employed by the RPAC to analyze recycling data since CY2006 so that meaningful trends and comparisons could be established. The M&R Subcommittee has continued to employ this methodology under the new Universal Recycling Law.

4.1 Data Collection

The M&R Subcommittee obtained data from DSM Environmental Services, Inc. (DSM) for CY2011. Their report, *The State of Delaware Assessment of Municipal Solid Waste Recycling for Calendar Year 2011*, is excerpted in Appendix C. In previous reports, DSM had collected data on recyclable materials collected by private industry in Delaware, while DSWA collected its own data and reported numbers directly to the RPAC. The RPAC then calculated commercial and residential waste disposal and recycling estimates using both data sets. This year DSM collected data from both the DSWA and from private industry, and calculated recycling rates using methodology consistent with the M&R Subcommittee's previous efforts.

This is also the first year that private industry was required to report on recycling activity, per the Universal Recycling Law. DSM received more reports from first-time reporters than in previous years, as well as more complete reports in general.

The RPAC and DSM have worked to insure that the methodology for data gathering is consistent with EPA guidelines and that there is no double counting of recycling activities. The survey work by DSM was funded by the DSWA for CY 2011, but program management has been the responsibility of the RPAC.

4.2 Diversion Rate Calculation

The waste stream can be broken down into two primary categories: Municipal Solid Waste (MSW) and non-MSW. Put simply, MSW is what most of us think of when we think of "trash" - even though it contains a high percentage of valuable resources. The EPA's guidance for calculating recycling rates limits "recycling" to the category of MSW. Additional detail regarding definitions of recycling can be found in RPAC's 2006 Annual Report and in "Measuring Recycling: A Guide for State and Local Governments" (EPA-530-R-97-011).

Determining the percent diversion of recyclables from Delaware’s solid waste stream involves the following calculation:

$$\text{Diversion rate of recyclables (\%)} = 100 \times \frac{\text{MSW recyclables, tons diverted}}{\text{MSW recyclables, tons diverted} + \text{MSW, tons disposed}}$$

The methodology developed by the RPAC calculates the percent of recyclables diverted from the MSW stream, as well as the total tonnage of MSW being landfilled. It also subdivides results into the residential and commercial sectors. These residential and commercial allocations were developed based upon comprehensive waste composition studies conducted in 2006 and 2007, the best judgment of DSM, and the best judgment of the members of the M&R Subcommittee.

Determining whether a material was generated by the commercial or residential sector can be difficult to determine and is not always intuitive. Generally the EPA and the M&R Subcommittee allocate materials to the original ‘generator’ even though they may not be the one who actually performs the recycling. For example, lead acid battery recycling performed by a commercial battery retailer would be attributed 80% to the residential sector because approximately 80% of the batteries are generated from non-commercial vehicles. While this ‘generator rule’ can be debated, it is consistent with general EPA guidelines and has been applied consistently since 2006.

4.3 Recycling Rates

Since CY2006, the RPAC has employed an objective, scientific, and auditable methodology for calculating recycling rates in Delaware that is consistent with the U.S. EPA’s guidelines. A summary of the recycling rates produced using the aforementioned methodology is shown in Table 2 below:

Table 2. Recycling Rates Summary, CY2006-2011.

	2006	2007	2008	2009	2010	2011
Diverted Recyclables (tons)	248,410	323,396	318,002	323,637	359,147	401,883
MSW Disposed	823,479	794,984	741,143	668,353	706,368	672,761
Total Municipal Solid Waste = Diverted Recyclables + MSW Disposed	1,071,889	1,118,380	1,059,145	991,990	1,065,515	1,074,644
Percent Diverted Recyclables	23.2%	28.9%	30.0%	32.6%	33.7%	37.4%

Results comparing residential to commercial sector results for CY2011 are shown in Table 3. The residential recycling rate is significantly higher than the commercial recycling rate in both years.

Table 3. Recycling Rates for Residential and Commercial Sectors, CY2010-2011.

	2010		2011	
	Residential	Commercial	Residential	Commercial
Diverted Recyclables (tons)	241,600	117,547	264,381	137,502
MSW Disposed	362,924	343,444	329,062	343,699
Total Municipal Solid Waste = Diverted Recyclables + MSW Disposed	604,524	460,991	593,443	481,201
Percent Diverted Recyclables	40.0%	25.5%	44.6%	28.6%

4.4 Behind the Data – CY2011

Despite a questionable economy, CY2011 saw a continued increase in diverted recyclables versus previous years and a decrease in landfilled MSW versus CY2010. The CY2011 statewide average diversion rate was 37.4%: a net increase of 3.3% since CY2010 (Figure 1). This trend is expected to continue through CY2012, which will be the first full year under the Universal Recycling Law mandate requiring single-family households with household trash collection (and many bars and restaurants) be provided with single-stream recycling collection services. From 2010 to 2011 the tonnage of diverted recyclables increased by 12%. This increase was largely due to increased yard waste and single-stream recycling.

Figure 1. Percentage of recyclables diverted from landfills in Delaware, CY2006-2011.

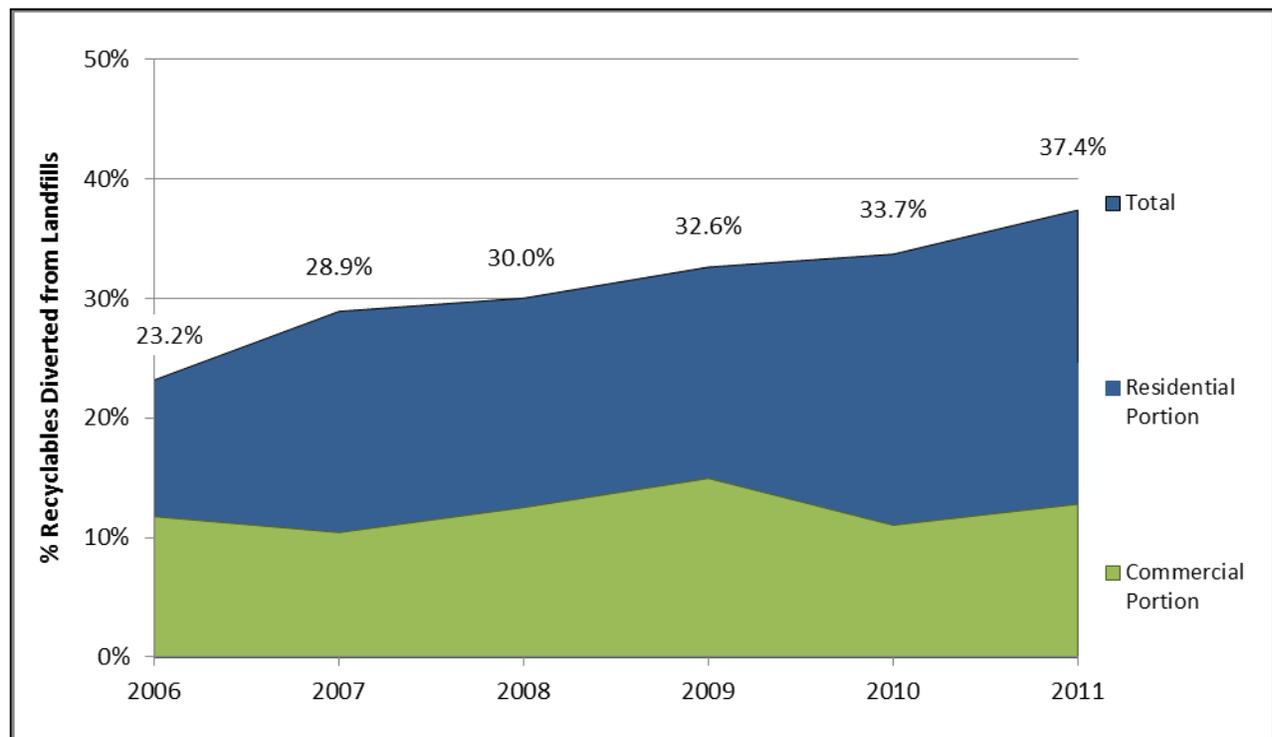


Figure 2. Total tons of MSW recycled or landfilled in Delaware, CY2006-2011.

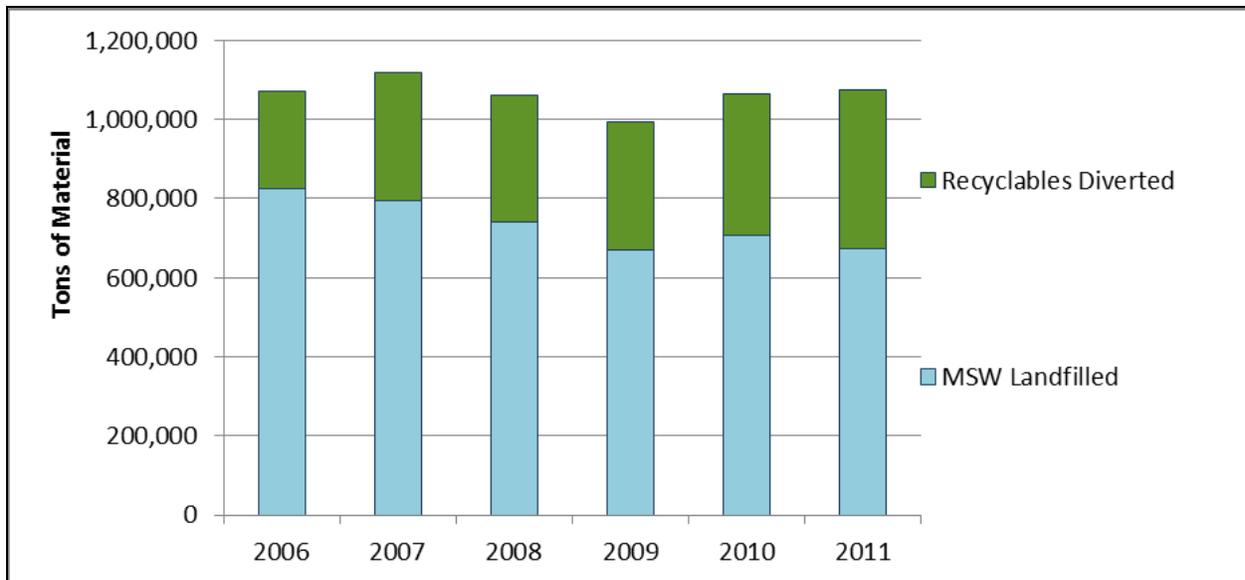
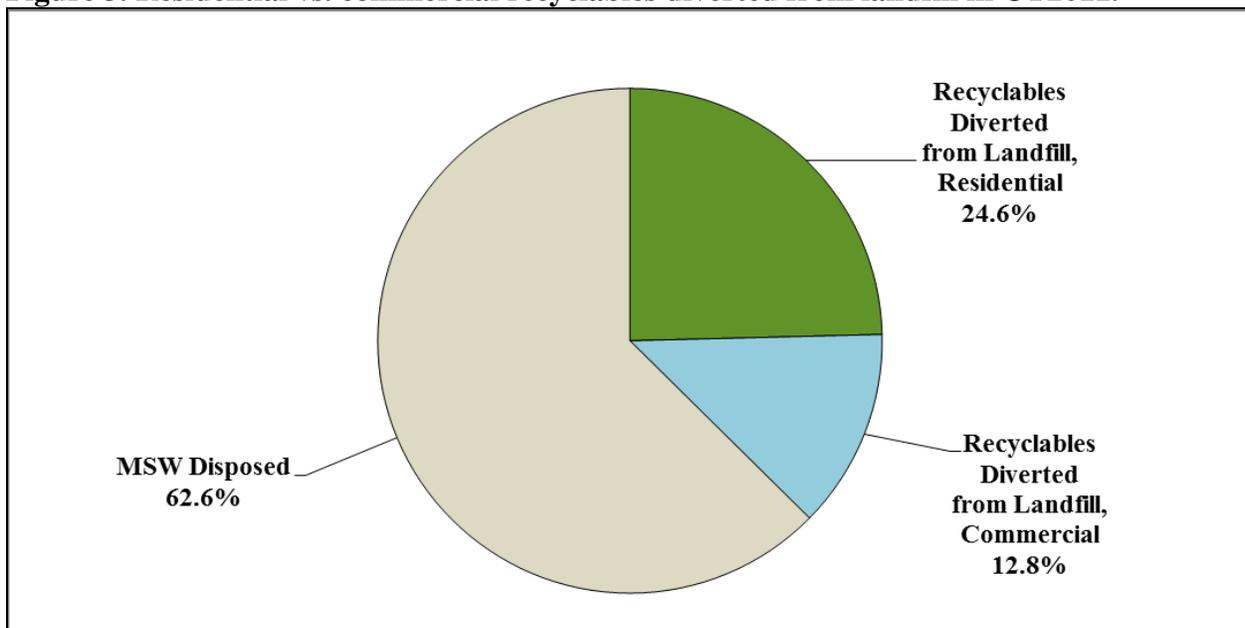


Figure 3 shows the percentage of residential and commercial recyclables diverted from landfilling in CY2011. The combined percentages of residential and commercial recyclables diverted equal the combined recycling rate of 37.4% for CY2011.

Figure 3. Residential vs. commercial recyclables diverted from landfill in CY2011.



Results from CY2012 should show a marked increase in diverted residential recyclables, due to the full year of single-family of residential recycling. The advent of statewide residential recycling has expanded opportunities for commercial recycling as nearly every waste hauler in Delaware now provides some recycling services and the RPAC is optimistic that diverted commercial recyclables will likewise increase prior to the commercial recycling mandate of January 1, 2014.

4.5 Status of the Recycling Goals

The passage of the Universal Recycling Law established diversion goals of 50% for MSW and 72% for all solid waste by 2015. The diversion rate of recyclables for CY2011 was 37.4% for the total MSW stream. To reach the goal of 50% by 2015, this will require an average annual increase in recycling diversion of 4.2%. With the continued yard waste bans on our landfills, universal recycling now implemented for all residences in Delaware, multi-family residence recycling beginning in 2013, and commercial recycling beginning in 2014, it is possible that this goal will be reached. However, additional measures may be required, including those described in the Commercial Recycling Report and identified in the recommendations.

By maintaining a consistent methodology for 6 years, the RPAC has been able to develop a reasonably accurate and meaningful trend line analysis for recycling progress in Delaware. Continuing with this consistent methodology will enable the accurate tracking of progress toward the state's goals and help to inform future policy decisions.

The RPAC has not yet established a methodology for collecting and analyzing data for the total waste stream. This is a very significant undertaking and the RPAC plans on approaching it with the same degree of thoughtfulness, thoroughness, and transparency employed for the development of the MSW methodology. A second statewide comprehensive waste characterization study is planned for CY2015. This study will allow us to further refine our measurements and methodology for MSW, but it will be requisite in order to develop the methodology and calculate the state's diversion of all solid wastes.

5.0 Recycling Grants and Loans Program

The Universal Recycling Law establishes the Recycling Grants and Low Interest Loan Program (7 Del. C., §6054 and 7 Del. C., §6055). This program is designed to help implement:

- (1) Recyclables collection programs (especially residential programs); and
- (2) Other recycling initiatives (especially the recycling of commercial waste).

DNREC began the Recycling Grants and Low Interest Loan Program (the Program) in calendar year 2011 and will offer it at least annually until 2014. The RPAC has assisted DNREC in developing the Guidelines for the first two cycles of the Program, and will assist in developing or revising guidelines for future cycles.

The application deadline for the first cycle of the Program was January 24, 2011. Funding criteria for this round prioritized startup costs for single-stream, curbside recycling programs. The first cycle primarily funded the purchase of recycling carts, collection trucks and related equipment, and outreach expenses. Most of the awardees were municipalities and waste haulers. Entities that applied, were awarded, and accepted funding during the first cycle are included in Table 4.

Table 4. Entities Funded During the First Grant Cycle.

Applicant	Funding
Bethany Beach	\$ 250,377.00
City of Dover	\$ 101,151.00
City of Lewes	\$ 118,830.00
City of New Castle	\$ 24,220.00
City of Newark	\$ 212,063.00
City of Rehoboth	\$ 40,187.00
City of Wilmington	\$ 657,320.00
Delaware City	\$ 29,130.00
DE Restaurant Association	\$ 12,470.00
Delaware Sanitation	\$ 301,662.00
Econo-Haul	\$ 983,075.00
Fenwick Island	\$ 10,920.00
First State Disposal	\$ 201,053.00
Hockessin Sanitation	\$ 101,831.00
Jay D C Enterprises	\$ 149,760.00
KRC Waste Management, Inc.	\$ 104,160.00
Moor Disposal Services	\$ 778,939.00
O'Fig Sanitation	\$ 66,375.00
Palmatary's Sanitation	\$ 114,447.00
Town of Elsmere	\$ 94,622.00
Town of Middletown	\$ 306,000.00
Town of Smyrna	\$ 170,295.00
Total	\$ 4,828,887.00

The application deadline for the second cycle of the Program was March 14, 2012. Funding criteria for this round prioritized compliance assistance with the multi-family residential component of the Universal Recycling legislation, although other projects were considered. This cycle primarily funded recycling dumpsters, collection trucks and related equipment, and outreach expenses. Entities that applied, were awarded, and accepted funding for the second cycle are listed in Table 5. Most of the awardees were municipalities and waste haulers.

Table 5. Entities Funded During the Second Grant Cycle.

Applicant	Funding
Wilmington Housing Authority	\$ 18,059.80
HARJOCO	\$ 54,941.84
DE Restaurant Association	\$ 3,000.00
Econo-Haul	\$ 138,965.00
City of Rehoboth Beach	\$ 18,300.00
City of Newark	\$ 6,604.00
Lutheran Senior Services	\$ 2,655.48
Burns and McBride	\$ 83,521.66
Total	\$ 326,047.78

In July 2012, the General Assembly used Bond Bill (House Bill 410) language to direct DNREC to issue a recycling grant to fund the DNREC run yard waste sites. Following DNREC's request for support, the RPAC recommended that DNREC use recycling grant money to issue either: a) A one-time grant for establishment of a private yard waste site that will serve as an alternative to both the DART and Polly Drummond Hill Road sites in between the two existing sites, OR b) A one-time grant for the establishment of a private alternative to the DART site and a one-time grant for the operation of the Polly Drummond Hill Road site or it's alternative. The intent was solely to transition state-operated yard waste drop-off sites into the private sector. The selected grantee, Holland Mulch, will use the grant funds to establish a new yard waste drop-off site in between the two existing sites. The two existing DNREC yard waste sites will likely close in December. The new Holland Mulch site will accept yard waste from Delaware residents at no cost for at least five years, and is expected to open in December 2012.

The Recycling Grants and Low Interest Loan Program is funded by the recycling fees established in the Universal Recycling Law. The fees will automatically sunset in 2014. As of August 2012, the total revenue generated was \$6.2 million. A total of \$5,636,934.78 has already been allocated on the grants mentioned above.

6.0 DNREC Activities

DNREC's activities conducted in support of waste minimization and attaining the waste diversion goals included providing support to the RPAC, encouraging the recycling of yard waste, implementing universal recycling legislation, and conducting outreach and education.

6.1 Supporting the RPAC

In fulfillment of its responsibilities under the Universal Recycling Law, and previously under Executive Order No. 90, DNREC continues to work diligently to provide support to the RPAC. The tasks that DNREC carried out in this area included, but were not limited to:

- Arranging all RPAC meetings;
- Preparing and distributing agendas and minutes for all RPAC meetings;
- Publicizing the RPAC meetings, reports, and efforts;
- Coordinating the Universal Recycling Grant and Low-Interest Loans Program;
- Participating in Subcommittees: Measurement and Reporting (M & R) Subcommittee (responsible for establishing recycling reporting requirements and an agreeable recycling measurement methodology for Delaware); Outreach Subcommittee; Commercial Industry Recycling Subcommittee; and Carpet Recycling Subcommittee (mandated by SJR 8 in April 2012);
- Drafting pertinent products or documents for RPAC meetings and Subcommittees; and
- Preparing the RPAC's Annual Report (including printing and distribution).

6.2 Supporting the Diversion of Yard Waste

The bulk of DNREC's yard waste diversion efforts have been the operation and maintenance of two temporary community yard waste demonstration sites in New Castle County. The sites were created for residents to bring yard waste from their own property for free. The materials collected at these sites are periodically ground into mulch, which is removed by a contractor. This generates a significant cost-savings to the Department. The following yard waste sites created approximately 5,000 tons of mulch last year:

- DART Mid-County site. Located near Bear, open since mid-2007.
- Polly Drummond Hill Road site. Located near Newark, open since late-2007.

Following direction from local legislators, DNREC permanently closed the Brandywine Hundred site on June 27, 2010. Since that time, a private company has been accepting yard waste from homeowners, at no cost, at a location in Edgemoor. As described in Section 5.0, the DART Mid-County site and the Polly Drummond Hill site will be replaced by a new, private yard waste facility in between the two existing sites. The new site will accept yard waste from Delaware residents at no cost for at least five years, and is expected to open in December 2012.

The enforcement of the Cherry Island Landfill yard waste ban has been in place for about four years. Yard waste bans were incorporated in permits for DSWA's Central and Southern landfills effective January 1, 2011. Individuals and businesses have adjusted well. It is estimated that as much as 120,867 tons of yard waste were diverted from Delaware's landfills in 2012. Banning yard waste has effectively diverted a useful material from entering the landfill while fostering local jobs and businesses.

DNREC also continues to work with the University of Delaware Cooperative Extension, the Delaware Center for Horticulture, and a large variety of community groups to educate residents on composting and other alternatives. DNREC readily presents yard waste management information and options to community and interest groups, maintains a yard waste management website (www.dnrec.delaware.gov/yardwaste), and produces a guide to backyard composting.

6.3 Implementing Recycling Legislation

Since the passage of the Universal Recycling Law, DNREC continues educational efforts while implementing the tasks required by the law. DNREC has met with waste haulers, municipalities, and the DSWA to coordinate the transition into universal recycling. DNREC has also been in many discussions with retailers, distributors, manufacturers, consumers, and the Division of Revenue to facilitate the bottle recycling fee collections, and has diligently worked to establish the Universal Recycling Grant and Low-Interest Loan Program. The grant program oversaw over \$4.8 million in funding to 22 municipalities, waste haulers, and related entities for single-family residential recycling during the first grant cycle. The second grant cycle awarded over \$325,000 in funding for multi-family residential recycling, which is required beginning January 1, 2013. At least two more cycles of the Program will occur, with an emphasis on commercial sector recycling efforts.

Recycling measurement guidance has been developed by DNREC in conjunction with the RPAC. DNREC also worked with the RPAC to complete a report for the Governor and General Assembly with recommendations regarding the implementation of universal recycling in the commercial sector. Significant outreach, discussed in detail in the next section, has been conducted and will continue to be a focus. Much work remains, but DNREC certainly has invested significant staff time and resources to support and carry out the Universal Recycling Law.

6.4 Public Education and Outreach

With the implementation of universal recycling, DNREC worked with RPAC and the DSWA on ways to reach practically every Delawarean. DNREC accomplished the following media efforts in 2012 (see Appendix D for examples):

- Maintained 'Delaware Recycles' website www.recycling.delaware.gov
- Maintained 'Delaware Recycles' Facebook page www.facebook.com/delawarerecycles
- Produced ongoing radio ads from Spring 2011-Fall 2012
- Produced a 30-second TV commercial that aired on WMDT stations in late Fall 2011
- Updated the 'How To Recycle' Guide (March 2012)
- Updated the 'Start Composting Now!' Brochure (August 2012)

DNREC continues to improve and augment the recycling information resources available on its website and in its handouts. All of RPAC’s Annual Reports, recent meeting minutes and agendas, several studies, information on the universal recycling legislation, and other information on recycling and composting can be found on the DNREC recycling website (www.awm.delaware.gov/Recycling/Pages/Recycling.aspx) and the DNREC-maintained RPAC website (www.awm.delaware.gov/Info/Pages/RPAC.aspx). These websites will soon include the commercial recycling FAQs, the commercial recycling toolkits, and the commercial recycling report due to the Governor and the General Assembly in November 2012. DNREC also has developed and updated websites dedicated to yard waste (www.dnrec.delaware.gov/yardwaste) and the Universal Recycling Law (www.recycling.delaware.gov).

DNREC conducted or participated in many activities to increase public awareness of recycling opportunities and benefits. DNREC distributed outreach materials and information at public events such as the Delaware State Fair, Coast Day, and various farmers markets. Presentations were also provided to schools and community groups upon request. Outreach activities focused on the opportunities and benefits of recycling and waste reduction. As a result of these activities, tens of thousands of Delaware residents were educated on a variety of recycling issues. Table 6 lists public outreach events and meetings attended by DNREC.

Table 6. Recent DNREC Public Outreach Events and Meetings.

Date	Meeting/Event (Location)	Time	Hosted By
December 1, 2011	Universal Recycling/Composting (Longneck)	8-10am	Winding Creek Village Men’s Breakfast Group
January 10, 2012	Multi-family Recycling/Grants (Newark)	3:30-5pm	DNREC/DSWA
January 19, 2012	Multi-family Recycling/Grants (Seaford)	3:30-5pm	DNREC
January 23, 2012	Multi-family Recycling/Grants (Middletown)	3:30-5pm	DNREC
January 24, 2012	Multi-family Recycling/Grants (Rehoboth)	3:30-5pm	DNREC
January 30, 2012	Multi-family Recycling/Grants (Dover)	3:30-4:30pm	DNREC
January 31, 2012	Multi-family Recycling/Grants (Wilmington)	3:30-5pm	DNREC
February 22, 2012	Grant Workshop (Georgetown)	4-6pm	DNREC
February 23, 2012	Grant Workshop (Dover)	3-4pm	DNREC
April 20, 2012	Earth Day Event (Wilmington)	11-2pm	Partnership for the DE Estuary
April 27, 2012	Go Green Community Day (Lewes)	9-2pm	Eagle’s Nest Christian Acad.
May 8, 2012	Multi-family Recycling (Wilmington)	3:30-4:30pm	Delaware Apartment Assn.
May 23, 2012	Wilmington Farmers Market (Wilmington)	8:30-2:30pm	Wilmington Farmers Market
June 27, 2012	Georgetown Farmers Market (Georgetown)	2-5:30pm	Georgetown Farmers Market/Chamber of Commerce
July 12, 2012	Millville Farmers Market	9-2:30pm	Town of Millville
July 19-28, 2012	Delaware State Fair (Harrington)	10-8pm	Delaware State Fair
July 24, 2012	C&D Recycling Presentation (Georgetown)	6-8pm	DNREC
July 26, 2012	C&D Recycling Presentation (Wilmington)	6-8pm	DNREC
July 31, 2012	C&D Recycling Presentation (Dover)	10-12pm	DNREC
July 31, 2012	Rehoboth Beach Farmers Market (Rehoboth)	11:30-5pm	Rehoboth Beach Farmers Market
August 8, 2012	Environmental Justice Camp (Dover)	1-2pm	Environmental Justice Camp
August 16, 2012	Millsboro Farmers Market	1-6pm	Millsboro Farmers Market
August 22, 2012	IRSD Back to School Fair (Georgetown)	3-7pm	Sussex Central High School
August 28, 2012	Grant Workshop (New Castle)	10am	DNREC
October 7, 2012	Coast Day (Lewes)	11-5pm	UD – Lewes Campus
October 20, 2012	Rider Pride Day (Camden)	9-2pm	Caesar Rodney School District

7.0 DSWA Activities

7.1 RECYCLE DELAWARE

Drop Off Center Program

The DSWA continues to operate over 170 recycling drop off centers conveniently located throughout Delaware. The drop off center program continues to be one of the most successful and cost-effective voluntary drop-off programs in the nation. Delaware residents can drop off single stream recycling as well as used motor oil, oil filters, household batteries, corrugated cardboard and textiles. In FY11, approximately 20,000 tons of recyclables were received at the drop off centers. The materials collected are taken to the Delaware Recycling Center (DRC) and Milford Recycling Center, where they are prepared for market.

Electronic Goods Recycling Program

In FY11, 1,755 tons of electronic goods were recycled through DSWA's electronic goods collection program. There are currently 12 electronic good drop-off locations throughout Delaware. DSWA provides free collection of electronic goods to government agencies and schools each month.

Household Hazardous Waste (HHW) Program

In FY11, DSWA held ten (10) HHW events throughout the state. Approximately 4,000 vehicles dropped off household hazardous waste. The total amount of HHW collected at all events totaled 309,206 pounds. In addition to the ten events held throughout the state, DSWA added a regular collection event at the DSWA Cheswold Collection Station. This regular Friday event started in March 2011 and collected 37,437 pounds of HHW from 517 vehicles.

Oil Filter and Waste Oil Recycling Programs

In FY11, DSWA collected 231 tons of oil filters and 720 tons of used motor oil from over 40 DSWA drop off centers located throughout Delaware.

7.2 Universal Recycling Activities

The Universal Recycling Bill was signed into law June 8, 2010. DSWA believes the Universal Recycling Law will significantly increase the amount of recycling participation in Delaware by requiring the municipalities and the private trash haulers to provide curbside recycling service to all of their customers by the mandated date of September 15, 2011. While the Universal Recycling Law did put an end to the DSWA curbside recycling program, DSWA still has an important role to play in recycling activities in Delaware. DSWA paved the way for the Universal Recycling by building the DSWA Curbside Program to 50,000 participating

households statewide. Growing such a large program proved that curbside recycling could be successful, and created a curbside recycling culture to Delaware residents. DSWA gave out over 70,000 recycling carts and 20,000 yard waste carts to municipalities and private haulers, which played a significant role in keeping start-up cost down for residents in those communities.

7.3 Public Education and Outreach

DSWA strongly believes in educating Delaware residents to increase awareness and to establish an interest in protecting the environment. DSWA educates residents about their programs through school and community presentations, attending special events, and developing educational books and program brochures. In 2011, DSWA attended over 140 school and community presentations reaching over 17,500 residents. DSWA distributed educational materials covering multiple topics for children of all ages with emphasis on recycling and composting.

In 2011, DSWA placed an important emphasis on its public outreach effort by attending over 28 different events throughout the state, which reached over 300,000 Delaware residents. DSWA attended events such as Delaware's Green and Healthy Living Expo in Newark, the Delaware State Fair in Harrington, University of Delaware's Coast Day in Lewes, as well as hosting the Annual DSWA Earth Day Event in Felton. DSWA attends events like these to promote environmental awareness throughout the state as well as educate the public on programs and facilities that DSWA provides for residents.

DSWA encourages citizens of Delaware to contact them if they are in need of environmental information concerning any DSWA program or facility. DSWA provides a Citizens' Response Line, (800-404-7080) which answers approximately 200 calls a day from residents. In addition, DSWA's website (www.dswa.com) provides even more information for Delaware residents. These resources provide valuable information and keep the personal touch that has helped to establish DSWA as a leader in the environmental community.

8.0 Recommendations

The RPAC's recommendations to Governor Markell and the General Assembly include steps they can take to increase the recyclables diversion rate:

- 1. Provide RPAC the discretion to fund those purposes specifically identified in the original Universal Recycling Legislation (7 Del. C. Chapter 60, Subchapter III, Solid Waste Recycling).** Do not divert further funds from the Delaware Recycling Fund without RPAC recommendations.
- 2. Lead by example - require recycling in all state government facilities, including public schools.** Many schools, legislative branch offices, and judicial branch offices are believed to lack effective recycling programs.
- 3. Support the continued implementation of Universal Recycling, as enacted by law.**
- 4. Continue to support the Division of Revenue efforts to maximize bottle recycling fee revenues.**
- 5. Assess the status of Executive Order 18.** Measure the status of recycling in all agencies required by Executive Order 18.
- 6. Support recycling outreach and educational efforts in Delaware.** There is a need to help Delawareans understand how to recycle, opportunities for various materials, and the benefits of recycling from both the residential and commercial sectors.

Appendix A. Universal Recycling Law

Delaware Code TITLE 7

Conservation

Natural Resources

CHAPTER 60. ENVIRONMENTAL CONTROL

Subchapter III. Solid Waste Recycling

§ 6051. Findings; intent.

In furtherance of the determination long established in § 6450 of this title that "the reduction of solid waste disposal and recovery of usable materials from solid waste are matters of extreme importance in minimizing the environmental impact of solid waste disposal through landfilling" and that it "is in the public interest to develop a comprehensive statewide system of recycling and resource recovery which maximizes the quantity of solid waste materials which can be recovered, reused or converted to beneficial use" the General Assembly hereby makes the following findings and declares the following intent with respect to the establishment of this subchapter. In order to establish a comprehensive statewide system of recycling, wherein recycling is maximized and the necessary economies of scale are realized, every residence and business must have access to recycling programs that are both convenient and cost effective. It is the intent of the General Assembly, in full recognition that the establishment of a comprehensive statewide recycling program has long been sought, that said program shall be accomplished by modification of the existing beverage container law and the establishment of universal recycling inclusive of the prescribed recycling programs, requirements and goals that follow. As such, liberal interpretation in favor of accomplishing the stated goals and objectives shall be exercised.

[77 Del. Laws, c. 275, § 1.](#);

§ 6052. Definitions.

Notwithstanding any definitions in Chapter 60 or 64 of this title to the contrary, the following words and phrases shall have the meaning ascribed to them in this subchapter unless the context clearly indicates otherwise.

(1) "Authority" means the Delaware Solid Waste Authority.

(2) "Beverage" means any mineral waters (but not including naturally sparkling mineral waters), soda waters or any other carbonated beverage not containing alcohol that is commonly known as a "soft drink" and any beer, ale or other malt beverage containing alcohol.

(3) "Beverage container" means any airtight nonaluminous container containing less than 2 quarts of a beverage under pressure of carbonation.

(4) "Dealer" means any person who engages in the sale of beverages in beverage containers to a consumer and shall include groups of retailers or retail chains.

(5) "Multi-family" means 3 or more attached structures, such as condominiums or apartments, generally intended for occupancy by individuals or families and where centralized community trash disposal and collection services are typically provided.

(6) "Municipal solid waste" means wastes such as durable goods, nondurable goods, containers and packaging, food scraps, organic yard waste and miscellaneous inorganic waste from residential (i.e. household), commercial, institutional and industrial sources such as appliances, automobile tires, old newspapers, clothing, disposal tableware, office and classroom paper, wood pallets, and cafeteria wastes. Municipal solid waste does not include solid wastes from other sources such as construction and demolition debris, auto bodies, municipal sludges, combustion ash and industrial process wastes.

(7) "On-premises sales" means sales transactions in which beverages are purchased by a consumer for immediate consumption within the area under the control of the dealer.

(8) "Organic yard waste" means plant material resulting from lawn maintenance and other horticultural gardening and landscaping activities and includes grass, leaves, prunings, brush, shrubs, garden material, Christmas trees and tree limbs up to 4 inches in diameter.

(9) "Recyclable material" or "recyclables" means any material or group of materials that can be collected and sold or used for recycling.

(10) "Recycling" means the process by which solid wastes are separated for use as raw materials, products or replacement of products, including the reuse of organic yard waste, but does not include the incineration of materials for energy.

(11) "Residential waste" means the solid waste generated in occupied single-family and multi-family structures. Also referred to as "household waste".

(12) "Single stream" means a system in which all fibers (including but not limited to paper, cardboard, etc.) and containers (including but not limited to plastic, glass and metal) are commingled for collection into 1 container instead of being sorted into separate commodities and multiple containers.

(13) "Single-family" means either a detached structure (i.e. a house) surrounded by open space or attached structures, such as town or row homes, generally intended for occupancy by a family and where individual trash collection services are typically provided for each structure.

(14) "Source-separated" means recyclable materials, including single stream recyclables, are segregated at the point of generation and kept apart from the waste stream by the generator thereof for the purpose of collection and recycling.

[61 Del. Laws, c. 503, § 1](#); [63 Del. Laws, c. 385, § 1](#); [67 Del. Laws, c. 341, § 1](#); [71 Del. Laws, c. 74, § 2](#); [77 Del. Laws, c. 275, § 1](#);

§ 6053. Universal recycling.

The goal of universal recycling is to create an economy of scale wherein a dramatic increase in Delaware's diversion of recyclables occurs in the most cost effective manner achievable while simultaneously creating job opportunities and significantly reducing Delaware's rate of waste disposal.

Universal recycling shall be implemented in accordance with the following provisions:

(1) Effective no later than September 15, 2011, the Authority shall cease providing curbside recycling services, including yard waste collection, and all persons providing solid waste collection services in the State shall also provide:

a. Single-stream curbside recycling collection services to all of their Delaware single-family residential customers, including delivery of a container for the purpose of storage and collection of recyclables that is adequately sized for the customers use such that recycling is encouraged and disposal of recyclables is discouraged; and the recyclables collection service shall be provided at a frequency of not less than once every other week.

b. Source-separated recycling collection services to dealers who provide on-premise sales, including delivery of a recyclables container that is adequately sized for the premise being served and a frequency of recyclables collection that shall preclude the recycling containers from overflowing and otherwise causing a nuisance.

c. All single-family residential and on-premise sales customers with a single charge for the collection of waste and recyclables on their "waste services" bill that is inclusive of the combined waste and recycling collection service costs. Local governments that do not presently bill separately for the costs of waste collection are exempt from this requirement.

d. Notification to all customers that the single-stream recycling service will be provided and instructions on participation prior to September 15, 2011.

(2) Effective no later than January 1, 2013, all persons providing solid waste collection services in the State shall provide:

a. Single-stream recycling collection services to all of their Delaware multi-family residential customers, including providing the multi-family complex with an appropriately sized and centrally located recyclables collection container or containers for the complex being served and ideally in the same proximity as the complex's waste disposal containers. Local governments may require multi-family complex owners to provide their own recyclable collection containers consistent with local requirements.

b. Notification to the multi-family complex management that the single-stream recycling service, including instructions on participation, will be provided.

c. A frequency of recyclables collection that shall preclude the recycling containers from overflowing and otherwise causing a nuisance.

d. Written justification to the Department for not providing multi-family recycling collection services where the physical constraints of the site prevent the placement of both trash and recycling containers. Exclusion from multi-family recycling is subject to Department review and approval.

(3) Owners of multi-family complexes must, at least once per calendar year, provide residents with instructions on participating in the complex's recycling program.

(4) The Recycling Public Advisory Council shall issue a report to the Governor and the General Assembly no later than November 1, 2012, with recommendations regarding the implementation of universal recycling in the commercial sector. It is the express requirement of this legislation that universal recycling be adopted by the commercial sector and that all commercial businesses actively participate in a comprehensive recycling program no later than January 1, 2014.

(5) Persons who choose to transport and deliver the solid waste and recyclables they generated on their own property for proper disposal or to a recycling facility of their choice respectively shall not be affected by this subchapter and may continue in this practice.

(6) Nothing shall impair the ownership of recyclable materials by the generator unless and until such materials are placed at curbside or similar location for collection and recycling, and nothing in this chapter shall be construed to prevent any person from collecting, transporting, processing, and marketing recyclable materials in competition with other persons in the same business, including the Authority, provided that the requirements of this subchapter are satisfied.

(7) Persons engaging in the collection, transportation, processing, or marketing of source separated recyclable materials shall conduct such activities in a manner that the source separated recyclable materials enter the marketplace and are otherwise not disposed via a landfill or by incineration.

[77 Del. Laws, c. 275, § 1.](#);

§ 6054. Delaware Recycling Fund.

(a) There shall be established in the State Treasury and in the accounting system of the State a special fund to be known as the Delaware Recycling Fund ("the Fund").

(b) The following revenue shall be deposited into the Fund:

(1) As specified in § 2912 of Title 30, the recycling fee on the sale of beverage containers;

(2) On the last day of each month, the State Treasurer shall credit the Fund with interest on the average balance in the Fund for the preceding month. The interest to be paid to the Fund

shall be that proportionate share, during such preceding month, of interest to the State as the Fund's and the State's average balance is to the total State's average balance;

(3) Any other revenue appropriated or transferred to the account by the General Assembly; and

(4) Repayment of low interest loans.

(c) The Fund shall be used by the Secretary for the exclusive purpose of funding specific activities designed to enhance the State's recycling rate and the diversion of recyclables that would otherwise be land disposed. The Fund may be expended only:

(1) To fund the Recycling Grants and Low Interest Loan Program referenced in § 6055 of this title. Annual funding for the Recycling Grants and Low Interest Loan Program shall be dependent on revenue generated by the Fund;

(2) To pay the limited and reasonable cost of the Department and the Recycling Public Advisory Council to study, evaluate and report on the status and potential for recycling various components of the solid waste stream, with emphasis on those aspects of municipal solid waste and commercial waste necessary to achieve the diversion goals established in § 6056 of this title;

(3) To pay the Department's limited and reasonable costs for administering this subchapter. No greater than 10% of the revenue deposited into the Fund shall be used by the Department for administering this subchapter without approval of the Joint Finance Committee and shall include but not be limited to: promoting the Recycling Grants and Low Interest Loan Program, universal recycling, zero waste principles, development of reporting requirements and related recycling initiatives; and

(4) To pay the Division of Revenue for the costs of administering § 2912 of Title 30.

(d) The Department shall commence the Recycling Grants and Low Interest Loan Program in calendar year 2011 and offer the Program at least annually thereafter until 2014.

(e) The revenue from the Fund and its disbursement via the Recycling Grants and Low Interest Loan Program shall be subject to audit and the recipient of any such funding shall agree to the audit and cooperate with the auditor as a condition of receiving funding.

(f) No expenditures shall be made from the Fund for any grants or loans pursuant to § 6055 of this title without the approval by the Controller General and Director of the Office of Management and Budget of a plan for revenues and expenditures for the period between December 1, 2010, and September 15, 2011.

[77 Del. Laws, c. 275, § 1.](#);

§ 6055. Recycling Grants and Low Interest Loan Program.

(a) There is hereby established a competitive Recycling Grants and Low Interest Loan Program (the "Program") to assist persons engaged in the business of collecting, transporting, processing, or marketing recyclable materials with the implementation of:

(1) Source-separated recyclables collection and processing programs with emphasis on start-up costs for residential single-stream recyclables collection; and

(2) Start-up costs for initiatives which result in the recycling of solid waste materials which would otherwise be land disposed, with emphasis on commercial waste.

The Program shall be administered by the Department, and monies from the Program shall be paid based on approved grant and loan requests. The Department shall be entitled to disburse grant and loan monies for the documented costs of implementing the collection or processing of recyclable materials. The Department shall be entitled to adopt guidelines and procedures for administering the Program and determining eligibility for receipt of funding pursuant to § 6054 of this title. Such procedures shall include provisions for repayment of loans to the Department and may include a rebate program for costs based on, including but not limited to, a prorated share of household customers in a recycling program that may have been in existence prior to creation of this law. The Department shall solicit the commentary of the grant eligible stakeholders during development of the grant guidelines and procedures. The Program shall be funded by monies made available under the provisions of § 6054 of this title.

(b) The Recycling Public Advisory Council, after the receipt of comments by grant and loan eligible stakeholders, shall make recommendations annually to the Department regarding the programmatic priorities for awarding Program funds under this subchapter. The Recycling Public Advisory Council shall provide recommendations regarding the categories and priorities for grants and loans that reflect an informed and representative view of the most urgent and important areas where grant funding will provide the most benefit to the State balancing current needs with those of future generations.

(c) The Department shall review all grant and loan applications and award grants and loans taking into consideration the Recycling Public Advisory Council recommendations. In those cases where the Department's funding decisions differ significantly from the Recycling Public Advisory Council recommendations, the Department shall report to the Recycling Public Advisory Council the justification for such differences.

(d) Any person providing solid waste collection services that is a recipient of a grant or low interest loan from the Delaware Recycling Fund shall not, as a result of implementation of universal recycling, increase rates charged for solid waste collection between such time as they make application for the grant until March 15, 2013.

[77 Del. Laws, c. 275, § 1.](#);

§ 6056. Adopting diversion goals and reporting requirements [Effective Dec. 1, 2010]

It is the intent of the General Assembly that implementation of the requirements of this subchapter reduce the amount of nonhazardous solid waste currently deposited in landfills in this

State by maximizing the recovery of recyclable materials. In order to do so, it will be necessary for the State to embrace the Zero Waste Principles of designing and managing products and processes to systematically avoid and eliminate the volume and toxicity of waste and materials, conserve and recover all resources, and not incinerate or bury them. In that spirit, the following Interim Waste Diversion Goals are established with the understanding that as more data and information regarding the implementation of universal recycling become available, the goals leading up to January 1, 2020 may be modified by the Department as circumstances dictate; however, the January 1, 2020, goals may not be modified without the approval of the General Assembly:

Table 1. Interim Zero Waste Diversion Goals (1)		
Date by which goal is to be achieved	Solid Waste Diverted from disposal	Municipal Solid Waste Diverted from disposal
January 1, 2015	72%	50%
January 1, 2020	85%	60%
(1) By weight		

(1) In order to effectively measure the diversion rates being achieved, all persons, including persons who collect, process or market recyclables, with the exception of those specified in § 6053(5) of this title, must report to the Department on a calendar year basis, no later than February 15 of the following year, the type and quantity of recyclables managed, the method of recycling collection used (single or multiple streams), and the location of the recycling facilities used pursuant to reporting guidance developed by the Department and the Recycling Public Advisory Council. Said reporting guidance shall be developed pursuant to the solicitation of stakeholders responsible for reporting, shall take into account the need for confidentiality of the information reported and shall be finalized no later than December 1, 2010. The first recycling report shall cover calendar year 2011 and shall be due no later than February 15, 2012.

(2) In order to ensure that the waste diversion goals specified in Table 1 of this section above are achieved by the dates specified, the Department, in cooperation with the Recycling Public Advisory Council [RPAC], shall assess progress and recommend to the Governor and General Assembly any additional mechanisms necessary including but not limited to: which waste streams must be diverted from disposal; the parties responsible for ensuring the identified waste streams are diverted from disposal; the date by which the diverted waste streams must be diverted from disposal; implementation of Pay As You Throw; Extended Producer Responsibility; incentive based recycling; waste bans and related requirements. Such assessment shall be completed, inclusive of any draft legislation determined necessary, and submitted to the General Assembly no later than November 1, 2014, as part of the RPAC annual report.

[77 Del. Laws, c. 275, § 1.](#);

§ 6057. Beverage containers -- Findings, intent, prohibitions.

(a) The General Assembly hereby finds that beverage containers are a valuable recyclable material and a major source of nondegradable litter in this State and that the collection and

disposal of this litter and solid waste constitutes a great financial burden for the citizens of this State; and that, in addition to this unnecessary expenditure of tax moneys, such litter unreasonably interferes with the enjoyment of life and property by our citizens; and that the practice of littering and disposal of a recyclable material is not compatible with previously adopted policies of the State in regard to proper use and protection of our natural resources.

(b) It is the intent of the General Assembly to increase recycling significantly, inclusive of beverage containers, thereby conserving valuable natural resources, removing the blight of litter on the landscape of the State caused by the disposal of beverage containers and other packaging, and reduce the increasing costs of litter collection and disposal.

(c) Prohibitions. -- No beverage shall be sold or offered for sale in this State:

(1) In containers connected to each other with plastic rings or similar devices which are not classified by the Department as biodegradable, photodegradable or recyclable.

(2) In a beverage container which is not recyclable or refillable.

[61 Del. Laws, c. 503, § 1](#); [64 Del. Laws, c. 57, § 1](#); [67 Del. Laws, c. 341, § 2](#); [77 Del. Laws, c. 275, § 1](#);

§ 6058. Establishment, composition and responsibility of the Recycling Public Advisory Council.

(a) There is hereby established a Recycling Public Advisory Council (the "Council"). The Council shall be composed of 16 members who shall be appointed by the Governor as follows:

(1) One member from the Department;

(2) One member from the Authority;

(3) One member representing county governments, with such member being recommended by the Delaware Association of Counties;

(4) One member representing municipal governments, with such member being recommended by the Delaware League of Local Governments;

(5) One member representing the recycling industry;

(6) One member representing the waste hauling industry;

(7) Two members, 1 representing the soft drink industry and 1 representing the alcohol beverage industry, representing the beverage industry;

(8) One member representing the Delaware State Chamber of Commerce;

(9) One member representing the Delaware restaurant industry; and

(10) Five members representing community-based or public-interest groups.

(11) One member representing the Delaware Food Industry Council.

(b) Members of the Council, except for those appointed pursuant to paragraphs (a)(1) and (2) of this section above, shall serve for terms up to 3 years and may not serve more than 2 consecutive terms but may again serve after 1 year off of the Council. Members shall be appointed for staggered terms so that no more than 5 appointments shall expire in any 1 calendar year. Members may be reimbursed for travel to and from meetings. The Governor shall appoint a Chairman from among the 16 members. Actions of the Council shall be approved by a majority vote of the Council. At least 9 members of the Council shall constitute a quorum. The Council may adopt bylaws as it deems appropriate to serve the purposes of this subchapter.

(c) The Recycling Public Advisory Council shall:

(1) Advise the Department and the Authority on all aspects of recycling;

(2) Advise the Department in developing criteria for the Recycling Grants and Low Interest Loan Program and selection of applications as well as provide an annual assessment of the revenue needed to satisfy the grant requirements;

(3) Maintain, in conjunction with the Department and the Authority, a methodology for measuring recycling rates;

(4) Provide advice and recommendations regarding the recycling outreach and education programs conducted by the Authority and/or the Department;

(5) Report to the Governor and the General Assembly annually by November 1 of each year on the status of recycling activities in Delaware. Said report shall include, but not be limited to the following:

a. Status of attainment of the recycling goals specified in § 6056 of this title;

b. An accounting of the recycling grants and loan program and any recommendations for future funding of the grants and loan program;

c. An assessment of the activities of both the Department and the Authority in achieving the recycling goals specified in § 6056 of this title;

d. An objective, auditable accounting of recycling rates for total solid waste, municipal solid waste, and residential solid waste;

e. Such other recommendations as the Council shall deem appropriate; and

f. Use the definitions of "recycling" and "municipal solid waste" as stated by the United States Environmental Protection Agency in its document EPA530-R-97-011 dated September 1997. The Council shall be able to adopt changes to these definitions.

(d) The Department, in concert with the Authority and the Council, shall:

(1) Monitor the State's recycling initiatives and measure Delaware's achievements toward attainment of the recycling goals specified in § 6056 of this title;

(2) Design and implement public educational efforts aimed at increasing public awareness of recycling opportunities;

(3) Provide technical assistance to local entities to assist them in increasing their recycling rates; and

(4) Provide administrative support to the Council.

[77 Del. Laws, c. 275, § 1.](#)

§ 6059. Enforcement, civil and administrative penalties.

(a) Whoever violates this subchapter, or any rule or regulation promulgated there under, or any order of the Secretary, shall:

(1) For the first conviction, be fined not less than \$100 nor more than \$500 for each day of violation;

(2) For each subsequent conviction for the same offense within a 10-year period, be fined not less than \$500 nor more than \$1,500 for each day of violation;

(3) In the Secretary's discretion, the Secretary may endeavor by conciliation to obtain compliance with all requirements of this subchapter. Conciliation shall be giving written notice to the responsible party:

a. Specifying the complaint;

b. Proposing a reasonable time for its correction;

c. Advising that a hearing on the complaint may be had if requested by a date stated in the notice; and

d. Notifying that a proposed correction date will be ordered unless a hearing is requested.

If no hearing is requested on or before the date stated in the notice, the Secretary may order that the correction be fully implemented by the proposed date or may, on the Secretary's own initiative, convene a hearing, in which the Secretary shall publicly hear and consider any relevant submission from the responsible party as provided in § 6006 of this title.

(b) Any person whose interest is substantially affected by any action of the Secretary may appeal to the Environmental Appeals Board, in accordance with § 6008 of this title.

Appendix B.

Recycling Public Advisory Council Members

Brock J. Vinton II, RPAC Chairman – Representing community-based or public-interest group
Citizens Solid Waste Solutions Commission

Paul R. Bickhart – Representing the recycling industry
Recycling Express of Delaware, Inc.

Michael D. Parkowski – Representing the Delaware Solid Waste Authority
CEO, Delaware Solid Waste Authority

Richard C. Cecil – Representing the Delaware Association of Counties
Executive Director, Delaware Association of Counties

Marianne Cinaglia – Representing community-based or public-interest group
Delaware Environmental Alliance for Senior Involvement

Marjorie A. Crofts – Representing the Dept. of Natural Resources and Environmental Control
Director, Division of Waste and Hazardous Substances

George Danneman – Representing the soft-drink industry
Delaware Beverage Association

Kelly Davis – Representing community-based or public-interest group
Educator, Delaware Technical and Community College Owens Campus

Michael Fusca – Representing the alcohol beverage industry
Standard Distributing Company

Brenna Goggin – Representing community-based or public-interest group
Delaware Nature Society

Waste hauling industry representative – Currently Vacant

Basil Kollias – Representing the Delaware Chamber of Commerce

Carrie Leishman – Representing the restaurant industry
Delaware Restaurant Association

Coralie Pryde – Representing community-based or public-interest group
League of Women Voters

Julie Miro Wenger – Representing the Delaware Food Industry Council

Stan Mills – Representing the Delaware League of Local Governments
Commissioner, City of Rehoboth Beach

Thomas Houska resigned from the RPAC in late August. Thank you for your service!

Appendix C. DSM Measurement Report

This appendix contains selections from the report shown below. An online version of the full report can be found on the RPAC website (www.awm.delaware.gov/Info/Pages/RPAC.aspx).

The image shows the cover of a report. At the top right, it says 'Final Report October 2012'. Below that, it says 'Prepared for: Recycling Public Advisory Council c/o DNREC, 89 Kings Highway, Dover, DE 19901'. The main title is 'State of Delaware Assessment of Municipal Solid Waste Recycling For Calendar Year 2011' in white text on a blue background. Below the title are two photographs: one of a large pile of brown organic waste and another of a recycling bin filled with cardboard boxes and other materials, with a worker in a yellow safety vest nearby. At the bottom right, it says 'Prepared by: DSM Environmental Services, Inc., PO Box 2, Windsor, VT 05089-0002, www.dsmenvironmental.com'.

Final Report
October 2012

Prepared for:
Recycling Public Advisory Council c/o
DNREC
89 Kings Highway
Dover, DE 19901

State of Delaware Assessment of
Municipal Solid Waste Recycling
For Calendar Year 2011

Prepared by:
DSM Environmental Services, Inc.
PO Box 2
Windsor, VT 05089-0002
www.dsmenvironmental.com

Results

Table 2 (on the next page) presents the 2011 results together with the 2010 and 2009 results to enable comparison. Because of changes in the way recyclables are being collected under the Universal Recycling law, Table 2 also presents DSWA managed recycling separately for 2011, 2010 and 2009. The difference between the 2011 and 2010 recycling is then reported for DSWA alone and for all other MSW recycling enabling a more straightforward comparison of changes in recycling in the State.

Because of the large number of materials categories and a changes in where recycling moves between years, Table 2 is relatively complex and requires explanation. Table 2 is heavily footnoted, and then there is a detailed discussion of the results by material type.

The bottom line is that material diverted for recycling increased by 15 percent, or roughly 52,700 tons (rounded) between 2010 and 2011. Although CY 2009 tonnages are shown, they are not included in the calculation of the difference.

It is DSM’s opinion that the majority of the increase can be directly attributable to the Universal Recycling Law, combined with better reporting due to the mandatory requirement and a small increase in economic activity over the past year. A detailed explanation is presented below.

Figure 1 below compares the major material category totals for 2011 and 2010 for all materials, including those recycled through DSWA programs and/or facilities. As illustrated by Figure 2 the bulk of the increase comes from increased single stream recycling and leaf and yard waste diversion.

Figure 1: Comparison of Material Recycled, CY 2011 and 2010 (Tons by Material)

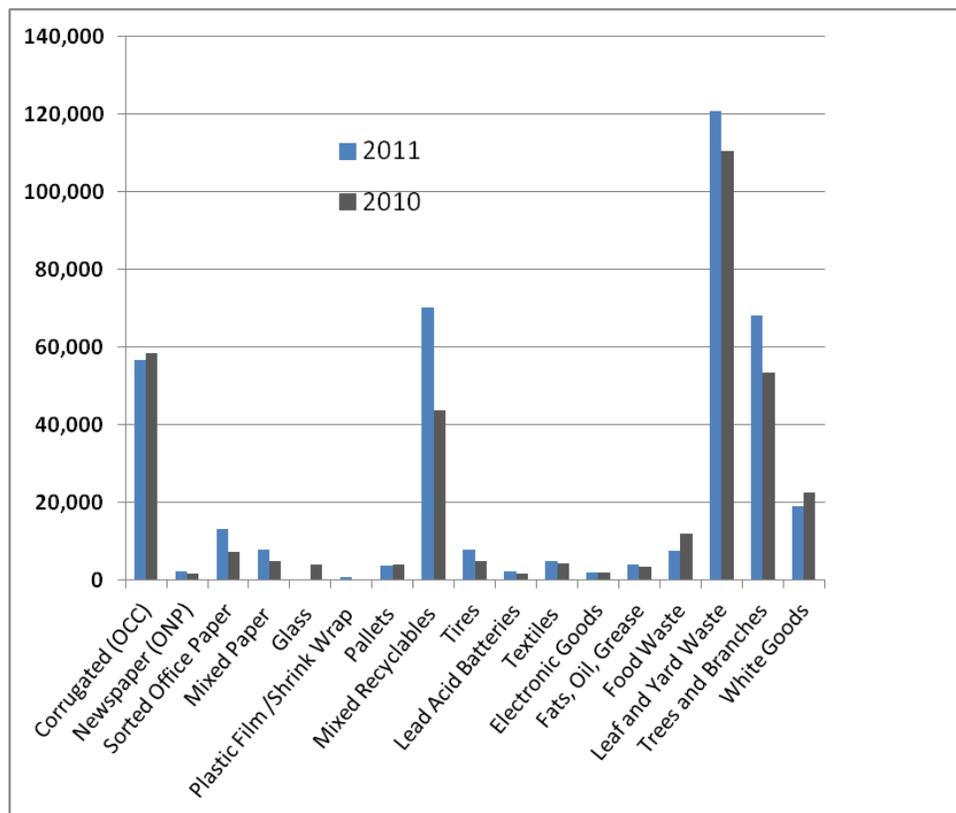


Table 2: Comparison of MSW Materials Recycled in Delaware, CY 2011, 2010 and 2009

Material Category	CY 2011			CY 2010			CY 2009			Difference, 2011 - 2010		
	All Other (tons)	DSWA (tons)	Total (tons)	All Other (tons)	DSWA (tons)	Total (tons)	All Other (tons)	DSWA (tons)	Total (tons)	All Other (tons)	DSWA (tons)	Total (tons)
Paper, and Paper Packaging												
Corrugated (OCC)	53,938	2,858	56,796	50,954	7,553	58,507	55,984	6,997	62,981	2,985	-4,695	-1,711
Newspaper (ONP)	2,369		2,369	1,769		1,769	2,728		2,728	600		600
Sorted Office Paper	13,078		13,078	7,449		7,449	6,359		6,359	5,629		5,629
Mixed Paper (1)	8,056		8,056	5,041		5,041	9,218	148	9,366	3,015	0	3,015
Subtotal:	77,441	2,858	80,299	65,212	7,553	72,765	74,290	7,145	81,435	12,229	-4,695	7,533
All Other Packaging												
Glass (2)	208		208	4,011		4,011	2,850	81	2,931	-3,802		-3,802
Plastic Film /Shrink Wrap (3)	974		974	425		425	2,178		2,178	549		549
Plastic Containers	223		223	37		37	27		27	186		186
Aluminum Cans	728		728	546		546	171		171	182		182
Pallets (4)	3,842		3,842	4,186		4,186	1,954		1,954	-344		-344
Mixed Recyclables (5)	16,002	54,133	70,135	4,755	39,051	43,806	4,950	38,075	43,025	11,247	15,081	26,329
Subtotal:	21,979	54,133	76,111	13,960	39,051	53,011	12,129	38,156	50,285	8,018	15,081	23,100
Vehicle Waste												
Tires (6)	6,831	989	7,820	5,049		5,049	18,735		18,735	1,782		1,782
Lead Acid Batteries (7)	2,341		2,341	1,893		1,893	1,917		1,917	448		448
Oil Filters	234	58	292	724	425	1,148	195	398	593	-489	-340	-829
Subtotal:	9,407	1,047	10,454	10,437	425	10,861	20,847	398	21,245	1,741	-340	1,401
Special Wastes			0			0			0			0
Carpet	742		742	422		422	15	63	78	320		320
Textiles (8)	4,946		4,946	4,413		4,413	3,155		3,155	533		533
Florescent Bulbs	8		8	7		7	38		38	1		1
Electronic Goods	240	1,883	2,123	241	1,909	2,151	449	2,023	2,472	-1	-27	-28
Other Batteries	48	48	96	101		101	3.48		3	-53	48	-5
Subtotal:	5,984	1,930	7,914	5,185	1,909	7,094	3,662	2,086	5,748	799	21	820
Organic Wastes			0			0			0			0
Fats, Oil, Grease	4,029		4,029	3,557		3,557	8,826		8,826	472		472
Food Waste	7,624		7,624	11,904		11,904	9,812		9,812	-4,279		-4,279
Leaf and Yard Waste	116,756	4,111	120,867	95,594	14,865	110,459	65,886	7,259	73,145	21,162	-10,754	10,408
Trees and Branches	68,157		68,157	53,580		53,580	53,281		53,281	14,577	0	14,577
Clean Wood	5,152		5,152	2,371		2,371	0		0	2,781	0	2,781
Subtotal:	201,718	4,111	205,829	167,007	14,865	181,872	137,805	7,259	145,064	34,712	-10,754	23,958
Metals			0			0			0			0
White Goods	18,444	768	19,212	21,676	973	22,649	18,174	1,270	19,444	-3,232	-206	-3,437
Subtotal:	18,444	768	19,212	21,676	973	22,649	18,174	1,270	19,444	-3,232	-206	-3,437
Other			0			0			0			0
Mixed Plastics (9)	2,063		2,063	2,705		2,705	669		669	-642	0	-642
Subtotal:	2,063	0	2,063	2,705	0	2,705	669	0	669	-642	0	-642
Total	337,037	64,846	401,883	286,182	64,776	350,958	267,576	56,314	323,890	53,626	-893	52,733

Table 2 Notes:

(1) Mixed Paper: All mixed paper reported was included as MSW even in cases where processors did not reveal sources.

(2) Glass: Glass was handled directly by beverage distributors for CY 2010 and CY 2011.

Table 2 continued:

(3) Plastic Film / Shrink Wrap: *This category includes plastic retail bag recycling as most generators were unable to report on plastic bags separate from film and shrink wrap quantities.*

(4) Pallets: *Only pallets composted or ground for mulch are included in the totals reported for MSW recycling.*

(5) Mixed Recyclables: *Single stream material collected from Wilmington's curbside recycling program, and collected by other haulers and delivered to locations other than DSWA during CY 2011 is reported separately. The DSWA column includes DSWA drop-offs and single stream material delivered directly to DSWA facilities.*

(6) Tires: *As in 2010, a large amount of tires were processed for tire derived fuel in 2011, which is excluded from the EPA recycling rate. The balance went to end uses such as crumb rubber and engineered products including drainage material, and playground surfacing, which is included in the EPA rate.*

(7) Lead Acid Batteries: *The total reported in 2010 of 14,205 tons was corrected to 1,893 to reflect a data reporting and recording error caught when 2011 reports were filed.*

(8) Textiles: *Used clothing (including shoes) exported for recycling or reuse. The end uses change based on the condition and changing markets. Typically clothing is sorted into 4 color categories and sold as rags, or bagged as is and sold as clothing. No breakdown of the actual end use is available.*

(9) Mixed Plastics *may include plastic packaging and other waste plastic generated by manufacturers but sent off site but are reported as mixed plastics by the recycler. Roughly 50% are estimated to qualify as "MSW recycling" consistent with the estimates made in prior years.*

As illustrated by Table 2, total recovery, inclusive of DSWA recycling activity, increased by 52,700 tons. That increase was made up entirely by recyclable materials not delivered to DSWA facilities. This is the result of a combination of factors, as described by material category below, but primarily is the result of increased private sector recycling activity stimulated by the Universal Recycling Law and better reporting due to mandatory reporting law.

Paper Recycling

Overall, paper recycling was up by 6200 tons (rounded) even though corrugated cardboard was down by 2900 tons (rounded). In reviewing paper quantities it is important to note that single stream recycling accounts for some paper recycling that was previously reported separately in Delaware. DSWA believes that this was a factor in both 2010 and 2011, given the amount of corrugated cardboard observed being delivered to DSWA single stream transfer stations and the decrease in corrugated cardboard reported separately at DSWA.

The economic downturn that began in 2008 appears to have slowed in 2011, although the continued increase in the use of electronic media and record keeping, is expected to continue to reduce paper generation. In addition, a change in packaging trends from corrugated cardboard to shrink wrap and other types of reusable shipping containers is expected to impact corrugated cardboard generation. Finally some of the decline in corrugated cardboard reported is likely reported instead as single stream recycling.

For 2011, two large generators did not report and one broker reported a significant decrease in accounts in Delaware. It is possible this material was picked up by a new broker servicing these accounts that did report to DSM. But because brokers often do not reveal all of their customers, DSM cannot confirm this. The lack of reported data from two large generators was offset by an increase in reporting by brokers and paper shredders/document destruction firms as a result of the mandatory

reporting requirement. In particular, the majority of the increase in sorted office paper and mixed paper was due to better reporting by document destruction firms.

Other Packaging Waste

Recycling of packaging wastes are up by 22,000 tons solely due to the increase in single stream recycling activity across Delaware. Single stream recycling was up over 26,000 tons for CY 2011. While a portion of this was due to improvements in Wilmington's program (1900 tons), the majority is attributed to the new universal recycling requirement and the increase in the number of haulers offering single stream recycling collection.

Other changes in packaging waste recycling include:

- Recycling of glass reported separately was down by 3800 tons due to an increase in single stream recycling accepting glass and the sunset of the mandated beverage container redemption program that required wholesalers and distributors of glass beverage containers to handle return containers.
- There was an increase in shrink wrap recycling mainly due to an increase in reporting by generators for 2011.
- There was a decrease in the amount of pallets reported going toward mulch applications.

Scrap Metal

While metal recyclers reported a better year in 2011, white goods (appliances) reported for recycling were down by 3400 tons (rounded). This is the result of one major recycler reporting a significant decrease in appliances recycling. Several scrap metal recyclers have reported aluminum cans separate from aluminum scrap metal for CY 2011, and this enabled DSM to report higher numbers for aluminum can recycling over 2010. DSM discontinued reporting of all other scrap metals not counted as MSW recycling to reduce the burden on scrap metal recyclers to report.

Green Waste

CY 2011 saw another significant increase in the recovery of green waste. Leaf and yard waste recovery was up by over 10,400 tons over CY 2010, even after a large increase in 2010 over 2009. In addition trees and branches were up by 14,600.

Overall, this increase is largely explained by three factors:

- Continued better compliance and enforcement of leaf and yard waste bans at the DSWA facilities;
- Landscapers and tree companies having slightly more tree and shrub work than in CY 2010; and,
- Storm events that led to more trees and branches needing removal from properties.

In addition, the demand of the Wilmington Organic Recycling Center (WORC) and the Blue Hen Organics facilities may help to drive increased green waste recycling, or better reporting of diverted green waste.

Food Waste

There was an overall decrease in food waste recycling reported for 2011. This decrease was not offset by deliveries to the two facilities now on line that accept food waste for composting from Delaware generators. The Blue Hen and WORC facilities increased food waste composting in Delaware but this was offset by a decline in activity by one recycler that takes expired meats and slaughterhouse waste out of state for processing and composting. A follow up interview with this recycler indicated that several slaughterhouses had closed in the past year.

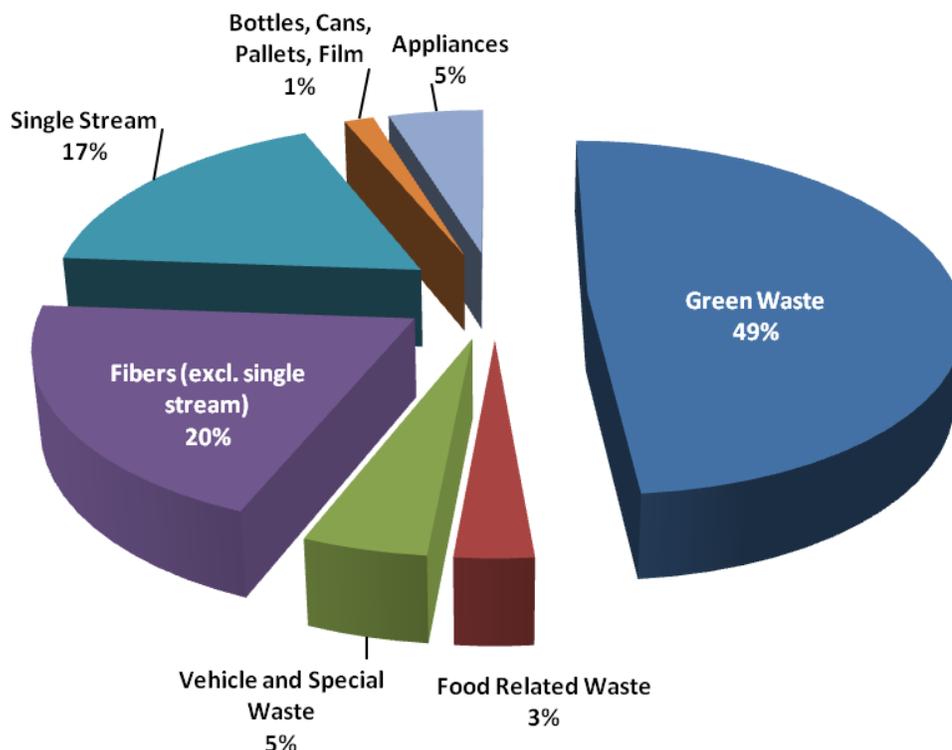
Vehicle Waste

The tons of tires reported as recovered for other uses decreased by 1,800 tons (rounded). This is due to the end uses of tires largely shifting to fuel – either going to waste to energy facilities in the region, or being processed for tire derived fuel and sold to facilities farther away. This may be because tires were no longer demanded for construction at the Cherry Island Landfill – which would count as recycling - whereas tires going to waste-to-energy do not.

Summary

Figure 2, below illustrates the breakdown of MSW materials recovery, by material type, for Delaware for 2011, including DSWA recycling activity. Figure 2 emphasizes the growing role of single stream recycling and leaf and yard waste composting in materials recycling in Delaware.

Figure 2: Materials Recovery by General Material Category
Included in EPA Definition of MSW Recycling (State of Delaware, CY 2011)



Residential vs. Commercial Recycling Activity

DSM estimated the percentage of each material recycled and classified as MSW generated by a residential as opposed to a commercial source. These allocations are shown in Table 3.

While in some cases the source of the material was clear, in others DSM was required to make our best professional judgment as to the source of the material. Since EPA does not attempt to quantify residential and commercial recycling separately, generally acceptable guidelines for allocation of materials recycling to the residential and commercial sector are not available.

In other cases, DSM worked with RPAC to agree upon acceptable allocations of materials recycling to the commercial and residential sectors. For example, 90 percent of all of white goods are reported as residential recycling. Leaf and yard waste totals are allocated as 8 percent commercial with the balance residential consistent with the 2004 survey of yard waste generators and processors.¹ Finally trees and branches are allocated as 11 percent commercial, and the balance residential, consistent with the same 2004 survey. This percentage may need to be revisited with the growth in yard and tree waste processing in light of the landfill bans.

It should be noted when reading Table 3 that in the past significant amounts of newspaper, corrugated cardboard and mixed paper generated by residential sources were reported separately by DSWA, while now all paper, with the exception of a declining stream of separated cardboard, collected by DSWA is a single stream of paper and containers and reported under “packaging”. This makes year to year comparisons of paper recycling in this report and in aggregate more difficult.

¹ This 2004 report surveyed landscapers and other generators or processors of yard waste, brush and tree waste and found roughly 8 percent of leaf and yard waste and 11 percent of tree waste was stated to be from commercial sources.

Table 3: Estimate of Residential vs. Commercial MSW Recycling Activity (CY 2011)

Material Category	Residential (tons)	Commercial (tons)	Total MSW (tons)
Paper			
Corrugated (OCC)	917	55,878	56,796
Newspaper (ONP)	0	2,369	2,369
Sorted Office Paper	0	13,078	13,078
Mixed Paper	0	8,056	8,056
Subtotal:	917	79,381	80,299
Packaging			
Glass	0	208	208
Plastic Film / Shrink Wrap (1)	0	974	974
Plastic Containers	0	223	223
Aluminum Cans (2)	364	364	728
Pallets	0	3,842	3,842
Mixed Recyclables (3)	57,295	12,839	70,135
Subtotal:	57,660	18,452	76,111
Vehicle Waste (4)			
Tires	6,256	1,564	7,820
Lead Acid Batteries	1,873	468	2,341
Oil Filters	234	58	292
Subtotal:	8,363	2,091	10,454
Special Wastes			
Carpet	0	742	742
Textiles (5)	4,946	0	4,946
Florescent Bulbs	0	8	8
Other Batteries	86	9.6	95.9
Electronics (6)	1,318	805	2,123
Subtotal:	6,350	1,564	7,914
Food Related Wastes			
Fats, Oil, Grease	0	4,029	4,029
Food Waste	0	7,624	7,624
Subtotal:	0	11,654	11,654
Green Waste			
Leaf and Yard Waste (7)	111,440	9,427	120,867
Trees and Branches (8)	60,585	7,572	68,157
Clean Wood	0	5,152	5,152
Subtotal:	172,025	22,151	194,176
Metals			
White Goods (9)	19,066	146	19,212
Subtotal:	19,066	146	19,212
Other			
Mixed Plastics (10)	0	2,063	2,063
Subtotal:	0	2,063	2,063
Total:	264,381	137,502	401,883

Table 3 Notes (Numbers may not add due to rounding):

- (1) Includes retail bags returned as part of grocery and retail recycling programs.
- (2) Aluminum can recycling reported by scrap metal dealers assumed to be 50% residential and 50% commercial.
- (3) Single stream recycling through Wilmington and other municipalities assumed to be 100% residential, and deliveries to DSWA drop-offs and transfer stations, 80 percent residential. All other single stream recycling reported was estimated as residential and commercial by the reporting entity.
- (4) All vehicle wastes recycled are assumed to be 80% residential and 20% commercial. This is consistent with past reporting. Reported source of tires was 80% cars by one major tire recycler.
- (5) All textiles are considered residential consistent with past reporting. The documented source of textiles is unknown, however DSM assumes most textiles came from residential sources. Also textiles reused are excluded under EPA but included here since reuse versus recycling cannot be determined.
- (6) Electronics collected by DSWA are assumed to be 70% residential, and all other electronics assumed to be 100% commercial consistent with past reporting.
- (7) Leaf and Yard waste allocations were made using the same percentage used in previous DSM reports.
- (8) Trees and branches waste allocations were made using the same percentage used in previous DSM reports.
- (9) White goods collected by DSWA assumed to be 90% residential and 10% commercial. All other white goods collected by scrap metal recyclers and retailers assumed to be 100% residential consistent with prior reporting.
- (10) Mixed plastics are assumed to be 100% commercial consistent with past reports.

Appendix D. Outreach Examples

Figure D.1 – “Delaware Recycles” Logo, used to unify and brand outreach efforts



D.2 – Radio Advertisements

Ongoing 60 second radio ads from late Spring 2011 – late Spring 2012. Messages are changed regularly. The stations Eagle 97.7, Cool 101.3, and La Exitosa 930 air at least 24 advertising spots per month. The stations WSTW 93.7 and WDEL 1150 air at least 13 spots per month. All stations air the spots on their respective websites as well as providing links to www.recycling.delaware.gov. This is a sample script:

(JINGLE: “Delaware recycles...its second nature”)

Delaware is recycling more and it’s easier than ever. In fact, the more we recycle, the more it becomes second nature. And the benefits are real. Think about this: Recyclable materials – tin cans for example – instead of going into the trash and on to a landfill can be used to make new products and most of those products are better and made with less energy than those made with 100% raw materials. Glass bottles and jars can be recycled into new products forever, but trash them and they never decompose. Plastic bottles, grocery bags, cardboard, & newspapers – it’s up to us to keep these materials from piling up in our landfills. Don’t treat them like garbage, RECYCLE! For more information on how to recycle, go to recycling.delaware.gov

(JINGLE: “Delaware recycles...its second nature”)

Figure D.3 – Website: www.recycling.delaware.gov



Figure D.4 – Facebook Page: www.facebook.com/delawarerecycles

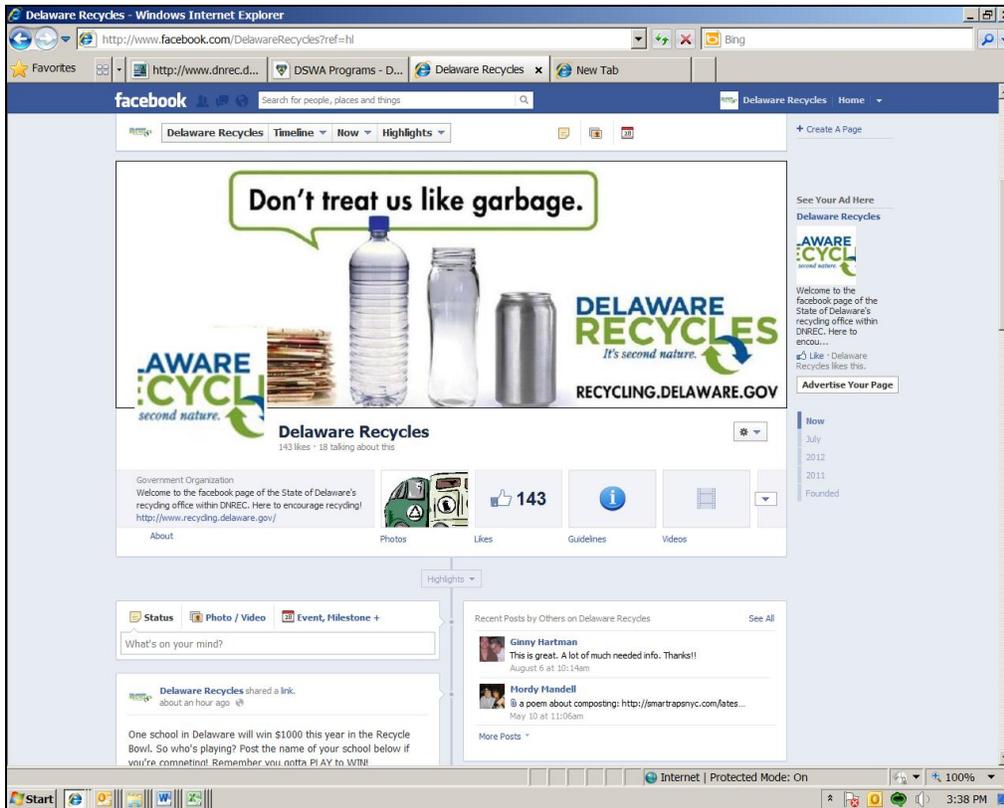


Figure D.5 – WMDT TV Commercial, also available on YouTube:
<http://www.youtube.com/watch?v=gMyiDqCZWbs&blend=1&lr=1&ob=5>



Figure D.5 – How to Recycle Guide

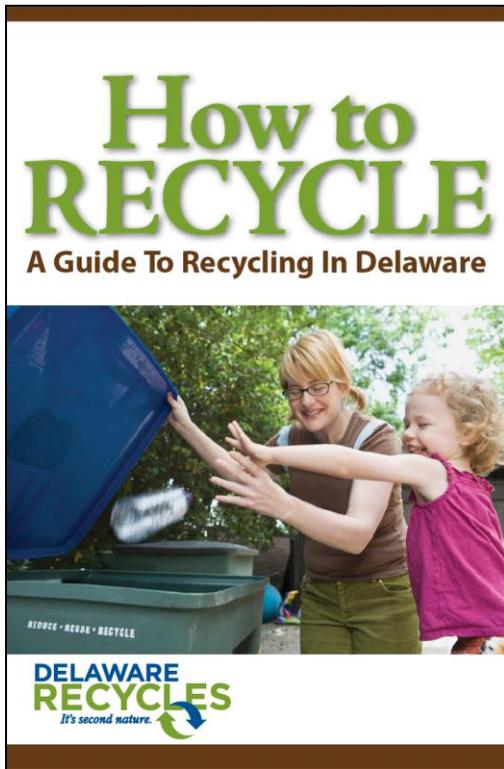


Figure D.6 – Composting Brochure



Appendix E. Background of Recycling Efforts in Delaware

The State of Delaware first began promoting recycling in 1975 with the passage of the Delaware Solid Waste Authority's enabling legislation. This led to the opening of the Delaware Reclamation Plant, which held the title of the largest recycling/reclamation project in the world for nearly 11 years. About 2.5 million tons of municipal solid waste and 0.5 million tons of sewage sludge were processed through this plant. This facility was shut down in 1993 and the plant was modified to operate as the Delaware Recycling Center which processes and markets all the recyclables from the 'RECYCLE DELAWARE' Drop-Off Program.

The next major milestone was the implementation of the Beverage Container Law in 1979 designed to prevent roadside littering.

In 1990, the statewide drop-off recycling program, known as 'RECYCLE DELAWARE', was established by the Delaware Solid Waste Authority. The DSWA currently operates over 140 'RECYCLE DELAWARE' centers and collects about 27,500 tons/year of recyclables. Included are brown, green and clear glass bottles, plastic bottles, newspaper and magazines, aluminum and steel cans (including aerosols), plastic grocery bags, textiles, motor oil and oil filters, corrugated cardboard, and household batteries (the batteries are not recycled, but disposed of properly).

Despite these recycling milestones, Delaware's former Governor, Thomas Carper, received frequent letters and phone calls from Delaware residents requesting implementation of curbside collection of recyclables. These requests spurred Governor Carper to call a meeting in late 1998 with representatives of the DNREC, the Delaware Economic Development Office (DEDO) and the DSWA to discuss the feasibility of implementing curbside collection of recyclables in Delaware. The result of this meeting was the issuance of Executive Order No. 60 establishing the Citizens' Work Group on Recycling to evaluate recycling in Delaware. The work group would also recommend ways to increase recycling in Delaware.

In the spirit of conservation and pursuant to the report "A Course of Action to Increase Recycling in the State of Delaware," which was developed by and contained the recommendations of the Citizens' Work Group on Recycling, Governor Thomas R. Carper signed Executive Order Eighty-Two which:

1. Established the goal of a thirty (30) percent diversion rate for recyclables from Delaware's residential solid waste stream.
2. Required the Department of Natural Resources and Environmental Control (DNREC), Division of Air and Waste Management (DAWM) to work in concert with the Delaware Solid Waste Authority (DSWA) and the Recycling Public Advisory Council (RPAC) to:
 - a) develop a method for measuring recycling,
 - b) establish a recycling grant program,
 - c) establish a public outreach and education program aimed at educating the general public and students on the value of recycling as well as to increase the recycling rate,
 - d) provide technical assistance to local entities to increase the recycling rate, and
 - e) provide administrative support to the RPAC.

3. Established the nine (9) member RPAC and tasked the RPAC with:
 - a) advising DNREC and DSWA on all aspects of recycling,
 - b) advising DNREC on developing grant criteria,
 - c) advising DNREC and DSWA on outreach activities to increase recycling, and
 - d) developing an annual report due on December 1st of each year detailing the status of recycling activities within Delaware.

Governor Minner appointed the members of the RPAC early in her Administration and the first RPAC meeting was held on February 27, 2001. DNREC also hired an Environmental Scientist and a Community Relations Officer to assist the Council. The Environmental Scientist aided the Council in developing the method for measuring recycling and provided recycling technical assistance to Delaware's communities and local governments.

The RPAC contracted a study on residential curbside recyclables collection in New Castle County. The final report, titled "Evaluation of Enhanced Residential Waste and Recyclables Collection and Processing for New Castle County", was published in 2003 by DSM Environmental Services, Incorporated. The report concluded that curbside collection of recyclables could be done at least as, if not more, cost effectively than trash if the system is properly designed.

In early 2006, Senate Bill 225 (SB 225) was introduced in the Delaware Senate. It established a framework for a statewide curbside recycling system, established a Recycling Fund to help pay for recycling programs, banned yard waste from disposal (providing for development of yard waste management facilities), established statewide recycling goals, and established the RPAC. The Governor's Office, DNREC, DSWA, and the RPAC all supported SB 225. The Bill did pass the Senate with amendments but it was tabled in the House of Representatives.

In October of 2005, DNREC Secretary, John Hughes, established the Solid Waste Management Technical Working Group (SWMTWG) pursuant to a directive from Governor Minner. It was comprised of individuals with technical backgrounds, financial backgrounds, and/or experience with municipal solid waste management systems and technologies. The SWMTWG was tasked to perform a feasibility review of municipal solid waste management alternatives and to recommend a program or programs that would best serve Delaware's municipal solid waste management needs. In April of 2006, the SWMTWG produced a report that recommends the state implement effective source reduction and recycling programs and building a processing facility.

The Citizens Solid Waste Solutions Commission (CSWSC), an organized group of environmentally conscious citizens, also produced a report in 2006. They called for more convenient and cost-effective recycling programs, better processing facilities for recyclables and discards, opposition to incineration, and a more focused recycling agency than the DSWA. They argued that recycling is an issue of resource management rather than one of waste disposal.

The City of Wilmington initiated a single-stream curbside recycling trial for over 6,000 households in the Summer of 2006. The City has partnered with RecycleBank, a recycling company based in Philadelphia, to provide the service. RecycleBank provides wheeled recycling containers, retrofits Wilmington's trucks to service the containers and weigh the material, provides various data reports, and provides outreach and education about the program. Through the RecycleBank program, participating households can earn up to \$35 per month in RecycleBank Dollars which can be redeemed at stores of the customer's choosing. The incentive encourages residents to recycle and helps Wilmington to divert waste from the landfill.

The recycling rate in Wilmington's trial areas went from almost zero to about 35% in about six months. In 2007 the program was expanded citywide.

In September of 2006 Governor Minner signed Executive Order 90, which replaced Executive Order 82 and re-established the RPAC. Executive Order 90 increased the membership of the RPAC by two public members. It also increased the former recycling diversion rate goal from 30% of residential solid waste to 51% of municipal solid waste.

The Cherry Island Landfill permit was renewed in 2006 with language that required the DSWA to ban yard waste from entering the landfill no later than January 1, 2007. After dozens of community meetings, a legislatively mandated delay in the ban, and the opening of three community yard waste demonstration sites, DNREC and the DSWA began enforcement of the ban on January 24, 2008.

House Bill 159 (HB 159) was introduced in 2007 and would have encouraged recycling via a comprehensive recycling grants program while discouraging disposal via a \$3 per ton assessment on landfilling. In May of 2008, HB 159 passed in the House of Representatives but was defeated in the Senate in June of 2008.

Starting in January of 2008, Kent County provided single-stream recyclables collection to residents serviced in their trash districts. This increased the number of Delaware households participating in recycling by over 11,000.

In early 2008, the DSWA converted their recyclables collection programs to single-stream. Participants no longer needed to separate traditional recyclables (i.e. glass bottles, cans, plastic bottles, mixed papers) by material type. As a result, recycling became more convenient and easier for people to participate. Other entities, including some waste haulers, also began to offer single-stream recyclables collection service.

In June of 2009, House Bill 201 was passed by the General Assembly on the last day of session. It essentially repealed the Delaware Beverage Container Law (or Bottle Bill), and removed the deposit and redemption system related to beverage containers. Governor Markell vetoed House Bill 201 in July of 2009, on the grounds that it would have a negative impact on recycling and offered no viable alternative.

In December of 2009, Peninsula Compost Company, LLC completed construction of the Wilmington Organic Recycling Center near the Port of Wilmington. This composting facility is approved to accept and process up to 160,000 tons of yard waste, wood waste, food waste, hatchery waste, and animal bedding into compost annually.

In February 2010, Governor Markell signed Executive Order 18. This Executive Order set goals in the following categories for the executive branch of state government: energy conservation/efficiency, LEED green building practices, renewable energy, reduced transportation impacts, recycling diversion (75%), and environmentally preferable purchasing.

In April 2010, the DSWA updated its Statewide Solid Waste Management Plan (SSWMP). The SSWMP calls for many waste reduction strategies, several of which required action from government and businesses.

In May 2010, Blue Hen Organics opened a 46-acre composting facility in Frankford to the general public. This facility is approved to accept and process 57,000 tons of yard waste, wood waste, food waste, hatchery waste, and chicken litter into compost annually.

On June 8, 2010, Senate Bill 234 (the Universal Recycling Law) was signed into law. This legislation passed after significant input from many stakeholders and coordination from the Governor's Office. It transitioned Delaware out of a flawed beverage container deposit system into a comprehensive recycling system. It also legislatively created a reformed RPAC.

On January 1, 2011, the Central Solid Waste Management Center (Sandtown Landfill) and the Southern Solid Waste Management Center (Jones Crossroads Landfill) stopped accepting yard waste mixed with trash. DSWA and DNREC agreed to permit conditions that restricted yard waste in July of 2010. All three DSWA landfills now ban yard waste.

By September 15, 2011, all single-family households with household trash collection, and many bars and restaurants, were provided with single stream, curbside recycling collection services.

In December, 2011, DSWA's Board of Directors approved staff to enter into agreements with the recycling company ReCommunity (to recycle municipal solid waste recyclables) and with Revolution Recovery (to recycle construction and demolition recyclables) at the Delaware Recycling Center (DRC) in New Castle.

In January, 2012, the DSWA, in partnership with Dart Container Corporation, began a pilot program to collect clean, #6 polystyrene foam (i.e. Styrofoam) for recycling at the DRC in New Castle. The program expanded to a second collection location at the Milford Transfer Station in February, 2012.

On March 1, 2012, Blue River Resources, LLC was granted a permit to operate a materials recovery facility (MRF) to separate paper, cardboard, plastic, metal, and glass for recycling. The facility is permitted to accept approximately 216,000 tons of recyclable waste materials per year. As of October 2012, the new MRF was 75% operational.

On March 17, 2012, non-profit organization Eden Delmarva launched the REPLENISH project with DNREC's assistance. The Sussex County-based project encourages the recovery of organic materials from 23 local restaurants to produce compost that is used at local farms. The compost fertilizes locally grown produce, which is then marketed back to the restaurants.

In April 2012, Revolution Recovery began accepting construction and demolition materials for recycling at its 42,000-square foot facility at the DRC.

In May 2012, the DSWA announced a 20-year agreement with ReCommunity to operate an automated materials recycling facility (MRF) at the DRC. State-of-the art sorting equipment will be housed in an existing building, and will process recyclable aluminum, plastics, paper, cardboard, tin and glass collected from throughout Delaware.

Spring and summer 2012 showed increased activity and awareness of recycling issues within the General Assembly. Senate Joint Resolution 8 established a strategy committee to study carpet recycling, and to report back to the General Assembly with a 10-year carpet recycling strategic plan. Senate Resolution 24 called for DSWA, DNREC, and the Zero Waste Working Group develop a plan and proposed legislation to address single-use plastic shopping bags by January of 2013.